The Great West—Illinois and the Prairies.

WHEN we reflect on the prairies of the West, and remember the activity of the inhabitants of that great Empire, we are lost in pleasing anticipations of the future, no less than with gratification at the aspects they already present. In reading, as we have done, the volume of "*Transactions* of the Illinois State Agricultural Society, with the proceedings of the County Societies and kindred associations," as prepared by Dr. John A. Kennicott, we come almost into the presence of a race of *mental pioneers*, such, as we verily believe, the world never saw before. The spirit that actuates and *moves* that region and its neighborhood is surprising, gratifying, and unique. The volume is the "first," no doubt the predecessor of a long series which will record the advance of our race through a career of unexampled prosperity, upon plains formed by Nature—

> "Where man hath no part in all this glorious work:
> The hand that built the firmament hath heaved
> And smoothed these verdant swells, and sown their slopes
> With herbage, planted them with island groves,
> And hedged them round with forests. Fitting floor
> For this magnificent temple of the sky—
> With flowers whose glory and whose multitude
> Rival the constellations! The great heavens
> Seem to stoop down upon the scene in love—
> A nearer vault, and of a tenderer blue,
> Than that which bends above our eastern hills."—*Bryant.*

Dr. Kennicott has executed a task which deserves the gratitude of every citizen of the State. It was no small labor to consign to print all the manuscripts of various merit which compose this goodly volume. Most ably has it been accomplished, and though we could wish that paper a little thicker, and ink a little blacker had been employed, the contents are so suggestive and full of information, that we pardon the slight defect for the knowledge it imparts, and more especially for introducing us to the *mind* of the State, of which, as an American, we cannot but be proud.

A young State, by comparison, in wisdom Illinois is old. With a wonderful soil to depend upon, she has found a bold and active people to cultivate it, with capacities for turning its blessings to the best account; her future it needs no prophet to foretell; unnumbered millions will enjoy the light of happiness upon her plains; man, here, is destined to fulfil all the objects for which he was created;

the ample means are all around him; he has only to be true to himself and his mission, to garner and gather the fruits which are nearly spontaneous. To use a phrase in vogue among the people, this State is just what was wanted—"it was made to order."*

The book is of great value not only to Illinois, but to the entire western settlements; its facts are of a practical kind, and come from practical men; having said this, and advised all who can to read the book, we proceed to a short and rambling examination of the contents that relate to our own subjects.

The Hon. M. L. Dunlap, at page 524, has some remarks on the "air currents" of that region to prove that they have the winters naturally belonging to their latitude, while the summers are two or three degrees of latitude warmer than their neighbors on the same parallels; thus, plants are grown in one climate, and wintered, to all intents and purposes, in another; this fully explains why so many varieties of fruit-trees and shrubs, which appear to flourish so thoroughly, are ruined by the severity of the winters; the fruit-grower will have to learn how to take advantage of the warmth and guard against the cold, and it will undoubtedly be found that *shelter* is the true remedy. The warm-air current, too, meets the cold of the north, and floods of rain result, or droughts, without this taking place, occur. Trees are wanted, not only for shelter from the wind, but a more equal distribution of timber through the State would, doubtless, produce more equal distribution of moisture.

After a hasty visit through the prairies, which are yet mainly unsettled, we were greatly exercised to know what we could do to assist the "new-comers" to good trees that would afford shelter; several letters passed between us and influential men of the State on this subject. Timber or mountain ridges are essential to check the powerful winds which sweep the prairies so unmercifully. We found the topic, as was to have been expected, had engaged the thoughts of others. In this volume there is an essay by Charles Downing, which it were well to call attention to. In a single page it contains the wisdom of an extensive treatise, and we, therefore, shall present it on a future page.

"Banish the winter winds from the prairie," says Samuel Edwards, of Bureau County, "and the climate of Illinois is, without doubt, one of the finest on earth,

* Dr. E. R. Roe, at page 507, remarks: "The whole prairie region of Illinois, so far as have examined it, consists of materials which have been transported from the North—even from the regions of Lake Superior. It matters little in what the transporting agency consisted; the fact is clear to the geologist, and to all intelligent observers that the soil and earth consist of the broken, crushed, and pulverized rocks of the formations many miles to the northward." It would be injustice to omit the mention of Robert Kennicott's contributions to the Natural History of the State; he is a very young man, a son of Dr. Kennicott, and promises to be one of the best naturalists of our country.

If arguments thoroughly enforced are ever wanted for the necessity of educating the industrial classes in useful things, Professor J. B. Turner's writings and speeches in this volume will be found to be sound and unanswerable.

rivalling Italy in its cloudless sky and serenity of atmosphere. A belt, several rods in width, of forest trees should be planted near buildings, on west, north, and northeast sides. For those who would have the *very best*, I would recommend evergreen-trees, of which the Norway spruce, hemlock, and American arbor vitæ are the most durable for screens. Plant seedlings; by the time they are of a proper size there will be a demand for all in the market"—and fifty times more, we add. He recommends, also, Austrian pine, black spruce, Scotch pine, red spruce, Cembran pine, Norway pine, white pine, European silver fir, and Siberian arbor vitæ. Of these, we should give the preference to the Austrian pine and the silver fir. Mr. Edwards thinks that cedar of Lebanon, Deodar cedar, Araucarian pine, Excelsa, Douglass spruce, Menzie's spruce, and English yew, are too tender; with the protection of hedges this can hardly be the case; they should not be given up without many efforts. Evergreens are what are most wanted.

One of the best essays in the volume on tree culture is by Edson Harkness. He considers that all the elements of nutrition for growing timber seem to be abundant in the soil of the prairies, and success has attended his experiments in deep black soil, with a nearly level surface. His list includes the above trees, and embraces American larch (tamarac), tulip and chestnut, black and white walnut, black locust, and Lombardy poplar. Of these, we should select the black walnut, the wood of which has already an increasing commercial value, and is second to mahogany; and for early use the American larch, which would very soon make valuable poles, and when thinned, the remainder would become highly useful timber. An acre—says another writer, Adnah Williams, of Galesburg—of locust would give a result of $480 in seventeen years, or nearly $30 per year as the product. Here is inducement enough to grow timber on land that could be bought much below a few months! return, and locust posts will always be wanted in that country of railroads. But the great idea combined is shelter, protection, and consequent comfort and happiness to man, beast, and bird, which cannot be measured in gold and silver, nor enumerated in dollars and cents. In the instances where shelter was provided, Mr. Williams says that, during the past (1853) severe season, both apple and peach-trees were loaded with fruit. He alludes, as do many of the writers, to the *Horticulturist*, and says, an article which appeared in it by the late editor, was "not only worth the price of a volume, but a dozen, to any man who has an acre of land."

There is an important suggestion in a former number of this journal regarding the planting of trees on the sides of railroads, which, where the land owned by the companies is not of sufficient breadth, might be difficult in practice, but on the central Illinois routes the space set apart for the company's use is fully one hundred feet wide, offering the best possible site for the growth of timber where it is wanted, and offering a prospect of wood for repairs of the route, as well as timber for the wants of settlers; thereby increasing the freight of the road, to say nothing of the profits, which may be set down at an interest on a thousand times the cost of the planting.

The vine is strongly recommended as a fruit for prairie land, as is the strawberry, pears, and especially apples; the summer Bergamot pear, perhaps a local variety, but a common one, is hardy and productive.

The Bartlett pear is said to be short-lived. Among apples recommended are Early Harvest, Sweet June, Early Scarlet Bough, Red Astrachan, Rambo, Fall Pippin, Fallen Walder, Rhode Island Greening, Roxbury Russet, White and Yellow Belleflower, Wine Sap, Willow Twig, and Newtown Pippin.

Incidentally, we learn here and there much regarding the State; for instance, Dr. Le Barron says: "Birds are much less numerous than in the Eastern States, from the scarcity of mature orchards and timbered lands in a newly-settled and prairie country." Among the most interesting facts are those regarding the culture of flax; a movement for the manufacture of linen is now going on in this country, that threatens, ere long, to supply an article for which we have annually paid millions to foreigners. This movement is connected with the newly-invented machinery for spinning flax; respecting this, and the raising of the raw material in the West, the volume gives an account that we would ask the agricultural journals of the country to disseminate. The culture is, perhaps, the most profitable yet attempted, and the demand is unlimited.

In conclusion, we wish every State in the Union, including our own, had a Dr. Kennicott.

PLANTING AND PRUNING.

BY B—, NEW JERSEY.

J. JAY SMITH: If we could only properly recollect in the right time what has been written on some subjects, as, for instance, on horticulture, we should not have to run over volumes to have a question settled just when we are about to apply it to practice; the matter is so great, shall I say diluted, that hints are forgotten; all previous experience is overlooked, and how often we find writers stating only a few experiments of their own limited practice.

"Facts and few words," are my motto. If you think my remarks deserving a corner in your invaluable journal, I shall venture to attempt a *resumé* of old and new notions on the subjects of planting and pruning, from the time of Laquintinye, Duhamel, Scobold, &c., down to our present time, and I shall try to state by my own experience what seems to me most applicable to this climate and latitude.

It is a settled fact that the habits of some fruit trees, and many other plants, are different here from what they are in Europe; some, which do well on the old continent, will not succeed here. For instance, the common Erica, which spontaneously covers the barren and waste grounds in Scotland, Belgium, and Germany,

and all the north, cannot live here. The European grapes cannot succeed in the open air even on our southern walls. The gooseberry, so much prized abroad, is here an inferior fruit, with a thick skin, and is often unproductive; marked differences prevail even among the species best adapted to both climates, as, for instance, the apple, pear, and cherry. The raspberries, which stand the English winters with perfect impunity, must be protected here during our keen winter blasts. The chestnut, which proves so hardy here as to brave 10 and 15° below zero, is a poor tree in Northern France and Belgium, always blighted by frost or other causes, and dying piecemeal after a limited existence.

Some fruits, as the peach, the currant, and the strawberry, are superior in America, or fully equal to the best varieties in the most favored zones of Europe, and if it were not for that unconquerable curculio, plums, apricots, and nectarines would prove as luscious and delicate as on any spot of our globe.

Hence the necessity of applying different rules to the treatment of the same species of fruits, as well in planting as the further management of the tree. It is well known that a tree, freshly taken from the nursery and exposed for some hours to the influence of a fine autumn day, is materially injured, owing, perhaps, to the absorbent action of our atmosphere; while in Europe, in a more damp medium, the same tree can be left exposed for days to all influences, frost excepted, with comparative impunity.

The long and forever controverted question, "When shall we plant?" naturally takes its place in the outset of these remarks.

And first, let it be well understood, that the first condition required to replant a tree with success, is that *it be taken up with proper care.* All mashed, broken, or stripped roots are injurious when left, and ought to be cut with a sharp knife; the epiderm or bark of the root seems not to heal up so readily as the bark of the tree; hence the necessity of leaving nothing but *sound roots* with a clean section or cutting, if cut at all, at the end; very small fibres or roots are of no use, according to Van Mons, when the tree has not been freshly taken up, and after a long transportation; they are soon deprived of all vitality, and are drawbacks instead of useful agents.

Now, when shall we plant, supposing we have the choice and everything at hand? Much depends on the weather, and the condition of the soil. It is always better to have a comparatively dry soil and fine weather, except in the case of plants with wiry roots, such as those of the hemlocks, &c. &c. I have been in the habit for years of preparing the holes as early as possible, either in late summer or early fall. I have two objects in view. First, the sods or detritus, mixed with the soil which is put in the holes after the bad subsoil, rock, ore, or stiff clay has been removed, have time to undergo a fermentation, injurious to the roots, when it takes place directly after planting; and, secondly, my heap of reserved good soil next to the holes, is mellow and best fitted to fall between the roots, and fill up all the intervening spaces by gently shaking the tree when it is well covered with fine soil. The shaking must be quick and short, not lifting the

tree more than two inches; cover well, and let the fall rains do their work; the tree is safe so far.

As for the proper time to plant I have found by experience that the best is the last days of October, or the first part of November, for those who have only a limited number of trees to place. It is true that we can remove trees as soon as the leaves show the first signs of decay, and often very successfully. It is also true that those taken up the first week in October, when properly root-pared and pruned, send out small rootlets, or at least make a fine seam on the edge of every clean wound, of course ready to start, and showing a protracted vitality carried through the trying process; but I always found that *provoking* the sap in that manner, and so early, and taking up and pruning always does, more or less, gives rise to a new process of vegetation *out of season*, and interferes with the general laws of the organism of the tree. This vegetation, when checked gradually only, enfeebles the tree; but if stopped suddenly by a keen frost of 16° or 17° or 20°, almost always injures the bark and inner wood in an irreparable way; the same thing as with the *buddings* starting in August, a fact well known by every nurseryman.

On the other hand, if we plant too late in autumn, the soil is not often well fitted and in good mellow condition; the roots having no active vitality left, do not surround themselves with that non-conducting medium which is well known to exist around the living and sound root, to preserve it from the injurious and lasting winter soaking. Now, as far as my own experience goes, if I had only *a very few trees* to plant, *and particularly if I had these close at hand*, I should let them stand in the nursery till the winter is fairly over, and as soon as the sap is about to start, say in this climate in March or early in April, I should take them up carefully, pare and prune moderately, and plant them at once. The healing process would take place immediately, and the tree would have gone through the winter trials surrounded by all the protections which Nature makes for it when left undisturbed. The objection is, naturally, that we can scarcely get choice trees in the nurseries in March; that the season is very short and uncertain, and the soil often very wet.

Now comes the question, Shall we take off a few or many branches or limbs, or leave all those which are not injured? In Paris, of late, a system has been eagerly advocated, which was founded on the theory, that many branches and leaves call for a greater amount of sap, and make, as they termed it, *a demand on the roots*, prompting these to display more activity, and, of course, shooting out more fibres. But as we can never take up a tree of much size without disturbing the roots, and as we have to suppress some injured or useless ones, the economy between the roots and upper limbs is disturbed, and the tree suffers. I have seen those trees taken up in the Jardin du Luxembourg, Jardin des Plantes, and elsewhere, and they showed for a long time afterwards, signs of weakness and dying limbs, the result of that disturbance in their general organism. If it is not safe to cut away thick stout limbs in the process of transplanting, it is a worse policy

to leave all those limbs, which, by the suppression of corresponding roots, cannot get their supply of sap; and, as there cannot be a stop in Nature's laws and in the natural process of vegetation, sickness and atrophy are the result of that rather overrated system. I have always found a good result in moderate pruning of limbs, and, of course, in a more restrained and equal distribution of the sap than in no pruning at all. A planted tree must start readily, handsomely, or it is a lost tree; for, years afterwards, the *principium morbidum*, the hidden death-stroke will come up and show itself outside.

If I have to remove a stout limb, destroying the harmony of a fine tree, I cut it some inches from its base so as not to make a large wound immediately *on the main body;* next year it will be time enough, and just the proper time, to cut it close, the tree having regained all its strength and its healing power.

And as to the practice of watering the planted tree, or, as it is termed, to *puddle* it, this will answer well enough in silicious soil, but in clay or any stiff soil, it will result in casting the roots as in a mould of baked earth, which, if copious rains do not come in time, will prevent the shooting out (or formation) of the delicate fibres or rootlets. I do not often recur to this method, unless I have to plant *in very wet* soil, and in a hurry; for then it is better to have a thorough *puddle* than lumps that will not fill up the interstices.

It is good, also, to cover the foot of the planted trees with any kind of brush, leaves, withered herbs, decayed straw, or even stable manure, if not rich nor fresh; for, I do not like fresh manure near the newly-planted tree. This ought to be done after a good copious shower has settled the roots, and immediately before the heavy frost sets in. If you do it too early, you often make a good recess and wintering place for bugs, worms, mice, &c., which will creep and flock together under this protection. If you have no leaves, or salt hay at hand, cover with stones, and let these remain on the foot of the tree all the next spring and summer. Old planted trees can be mulched with good manure at the same time, say late in October, or beginning of November, even after the first slight frost; the manure ought to be placed in a circle at least half a foot from the *body* of the tree, *where* it does no good, rather producing injury; and extending in a radius of three feet circular. Let us always mind that the tree does not take up its food close to its body, but far, far off, with its spongioles or small roots, its natural suckers; a thick root is of no use save as a pipe or channel to receive the nutritious sap brought from the extremities.

Never plant too deep; more trees are killed by that old erroneous process than by any other cause. Nature will show you what you have to do. Let the bark remain bark; if you force it below the surface, you will make it to go over to *root bark*, entirely different from the *upper bark*, which is at least a tedious, if not a dangerous process. Allow something in freshly made holes for the settling or sinking of the tree; if the roots remain covered the first year by a protection of a slight mound, brush, or stones, you can hardly plant too shallow.

In making your holes, kill every worm, bug, and, in general, every insect that

you find; after a year's growth, soap-suds thrown occasionally on the foot of the tree in winter or *early* spring, will destroy all those insects which have gathered beneath the *mulch*, or around the trees where insects generally creep for protection, even if not mulched.

Although stone-fruit trees, plums, peaches, apricots, &c., might be planted successfully in the fall, I find it better to plant these as early in spring as the soil will allow. Holes made for them before winter will afford dry earth enough on their edge (in one heap, for the soil must never be scattered around, and sods separated from loose soil) to allow of early planting. The hole being frozen is better than it was in the fall, and the sods, with which the hole (as said before) is at least half filled, will be all *reduced;* harmless to the roots because all fermentation is gone, and affording a good supply of food through the summer. If you have no convenient soil nor time, get pure sand and plant your tree in it, just enough to surround the roots; the spongioles will find more easily their way through that light porous medium, and get all their proper food in the richer soil in due time; for peach-trees, especially, I always *succeeded best in loamy soils*, by planting the tree in *five or six spadesful* of yellow or fine ordinary gravel. They start without stopping to look out for a proper supply, which cannot readily be found in clay soils, and they never show gum and disease as peach-trees so often do the first year when planted in too rich or clayey soils. As a general rule, in rich soils, the more sand you bring around the peach or plum-tree the better it is.

These remarks, Mr. Editor, have taken more room than I expected at first. If you want my opinion, and those of the best authors, combined, in regard to *pruning properly*, for an established tree, I shall try to compress those remarks in a narrower space.

[The above is sensible and to the point; the author has had much experience, and his observations, at home and abroad, evince a clear understanding of his subject. We shall be pleased to receive his remarks on pruning at his earliest convenience.—Ed.]

KEIM APPLE.*

Size, below medium, 2 inches long by 2⅜ broad; *form*, roundish, inclining to conical; *skin*, fair, pale yellow, waxen; *stem*, long, slender, 1 inch long by $\frac{1}{15}$ thick, inserted in a wide, moderately deep cavity; *calyx*, small, closed, set in a shallow, plaited basin; *cone*, medium; *seed*, brown, slender, ½ of an inch long, $\frac{3}{11}$ broad, ⅛ thick; *flesh*, white, tender; *flavor*, mild, pleasant; *quality*, "very good;" *maturity*, January to March.

* See Frontispiece.

THE APPLE SCALE, OR BARK LOUSE.

BY A. G. HANFORD, WAUKESHA, WISCONSIN.

THIS insect is attracting much interest among western orchardists. Cultivators understand the nature and extent of its depredations, and the difficulty of ridding their trees of this pest. All are anxious to find a sure remedy of easy application. Spirited controversies are carried on over the different remedies proposed, some denouncing those which do not at once accord with their own or some long established theory.

Facts are facts, in spite of regularly received orthodox opinions; now and then new theories must be wrought out to suit these unyielding facts. The intelligent progressive orchardist, will try, with all proper caution, such remedies as seem feasible and practicable—try them thoroughly, and hold fast to those which prove good, though they conflict with preconceived notions. An interesting account of this insect was given in the November No. of the *Horticulturist*. From some of the statements of "R.," however, my own observations would lead to different conclusions. I have never been able to discover more than one brood in a year, which in this latitude hatches about the first of June. The scale is never found on the new growth, made after about the middle of June.

Though quite active for a short period, probably but for a day or two, I do not think this insect journeys far from the place of its birth. Being exceedingly light, it is liable to be blown to different parts of the tree, or to other trees; hence arises the idea that it "crawls all over the tree." In from one to three days it becomes stationary, where it remains, feeding upon the sap of the growing tree, till it attains full size. Passing through its different stages, at the end of the year we find it full of life, ready to increase itself manifold. From these few parents spring a great army of depredators, going on to increase in like ratio each succeeding season.

Neglected trees of stunted growth, and more especially those planted on wet, badly drained land, are most liable to infection from this destructive insect. The preventive will readily suggest itself; drain the land and thoroughly cultivate the soil. Where the trees are not badly affected, this treatment alone will usually rid them of these pests.

I have seen whole orchards, in which the trees seemed entirely covered with these scales. No remedy, to my knowledge, has proved so efficacious or more harmless than "Tar and Linseed oil," which I have previously recommended through different agricultural journals. Equal parts are to be mixed thoroughly

by heating; when cool or just warm enough to spread, a very thin coat is to be applied with a brush to all the affected parts. An advantage of this remedy is, that it may be applied at a leisure time, late winter or early spring, when the tree is in a state of rest; to facilitate the operation, it will be well to first thoroughly prune the tree. This composition forms a varnish, which readily cracks when the sap begins to flow and the bark to expand, admitting the air to the bark. In the course of the summer it peels off, carrying the scales—now dead—with it, and leaving a clean surface. Notwithstanding this treatment conflicts with long received opinions, trees thus treated have not only survived, but have grown—this the second season—well, and borne good crops of fruit. The wash proposed by Dr. Harris, or any strong caustic application made while the insect is yet young, will doubtless be effectual in destroying them. The objection to the use of these remedies is, that to be of sufficient strength to kill the insect, it will also destroy the foliage, and thus seriously injure the tree; and then, too, as the insects do not all hatch out at once, more than one application is necessary, or enough are left to soon cover the tree again.

CONE OF ABIES NOBILIS.*

We present this month the portrait of the cone of Abies nobilis, or noble silver fir. This magnificent tree was introduced to Britain by the lamented Douglas, in 1831, who discovered it on the mountains of Northern California, and which, above all others, excited his admiration. Judging from young specimens, it is likely to display similar beauty in a cultivated state. In its native forests it attains a height of 180 feet, the branches spread horizontally, and are produced with the same uniformity of arrangement as those of the Araucaria excelsa, or Norfolk Island pine. The density and fine incurvature of its foliage divest the tree of that stiffness which characterizes most of the tribe to which it belongs, and impart much of that agreeable gracefulness so well defined in the Deodar cedar and Hemlock spruce. It is perfectly hardy in our climate, and should be one of the first trees planted as a single specimen on a lawn. It is the Picea nobilis of Loudon (whose arrangement of the pine family is now generally followed), and the Pinus nobilis of Douglas.

* See Frontispiece.

Fig. 1.

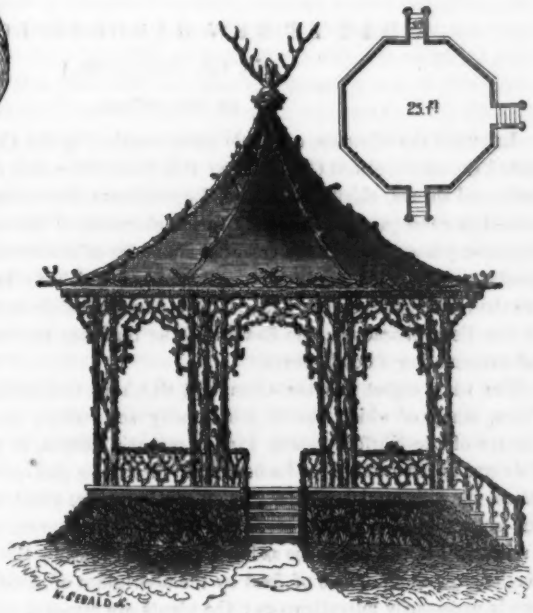


Fig. 2.

ILLUSTRATIONS OF ORNAMENTAL IRON WORK.

We continue the illustrations of ornamental iron work, from the designs of Mr. Robert Wood, of Philadelphia. Fig. 1 is a street, or door lamp, of excellent proportions. Fig. 2 represents an iron summer-house, which has been successfully employed. If it is regularly painted, a permanent structure may be erected that will require no repair.

A DAY AT KEW GARDENS, LONDON.

No. III. (CONCLUDED.)

BY THE EDITOR.

LEAVING the Museum, our little party repaired to the Conservatory, sometimes called the architectural Greenhouse; it is filled with a rich collection of Australian trees and shrubs, chiefly Myrtaceæ, Leguminosæ, Proteaceæ; the latter family so named in consequence of the very varied character of the stems, leaves, and inflorescence, yet agreeing in the essential character of the flowers and fruit. They are handsome evergreen shrubs, or small trees, of which the Banksias and Dryandras are the most remarkable. Their foliage, though harsh and rigid, has something of the Fern character; the flowers of the Banksias are arranged in bunches or tufts resembling a bottle-brush.

The next object was the Orangery, which is now mainly devoted to tender Pines, many of which are of great rarity and value; the noblest specimen in Europe of the Norfolk Island Pine, Araucaria excelsa, is placed here in winter. This tree is remarkable for its beautifully drooping and graceful branches, which almost vie with ostrich-plumes; small specimens are great favorites in our American conservatories, where every one who sees it regrets its want of hardiness. Araucaria Bidwilli has cones as large as a child's head; the seeds of it are eagerly sought after as an article of food by the aborigines of Australia. The collection here is necessarily miscellaneous; the plants are removed to the lawns in summer, and attract the eye of every one at all observant of trees. On quitting the Orangery, you encounter, alternating with the large beds, two lines of Deodars, designed for a long avenue of this stately and graceful tree; secondary lines are formed of Junipers, Cypresses, and other allied plants. We must not, however, detain our readers with trees, or we should never get through with our "Day." We must proceed to the

Great Palm House, or Stove, which is the glory of the gardens, constituting the largest iron and glass house in the world previous to the erection of the Crystal Palace. The extent of glass for covering this vast building is about 45,000 square feet; the ribs are inserted in enormous blocks of Cornish granite, placed in solid concrete. A substantial iron gallery runs round the whole at the height of thirty feet from the floor, ascended by flights of spiral staircases; this gives a fine view of the plants from above, and brings the spectator on a level with the summits of many of the loftiest palms. The whole of the iron of these stairs, &c., is covered with tropical vines in full bloom; and this to us was one of the great beauties of the house.

But those "Princes of the vegetable kingdom," as Sir William calls them, the Palms, constitute the splendid and striking feature of the vast area; two of the loftiest kinds of cocoa-nut afford good examples of one group of palms

with pinnated leaves, divided like the plumes of a feather. The two stoutest Palms are the West Indian or Jamaica Fan-palms, and are a good example of the second group, having palmate or fan-shaped leaves. So enormous are these specimens that each plant, with its earth and tub, are calculated to weigh 17 tons. Here, too, is the Date-Palm, producing the dates of commerce and of Scripture; also the plant producing the Palm-oil, now of so much importance. Sir William took particular pleasure in exhibiting to us from the gallery, the Plectoxoma elongata, presented by Dr. Willich, which, with its luxuriant foliage and very curious spring-stem, has the most singular mode of getting up in the world. The spines are digitate, or united together like the fingers of the hands, or still more resembling the wonderful conformation of the foot of the mole; its leaves are of vast length, and pinnated like the shafts of a feather, so long, indeed, that they, as well as the slender stem, need support. Nature has come to the rescue; the main stalk of the leaf extends *at the end* into a lengthened slender tail, *armed all along with strong deflexed hooks*, by means of which, while running up among the stems of other trees and plants, and catching hold of their branches, the foliage and stem are propped in every position. In the young plant, these spines are upright, and lie flat against the stalk of the leaf, not becoming reflexed till they are called forth by the wants of the plant. Some bamboos have grown to the surprising height of 68 feet in 5 months; this includes a long period in their first stage, in which they make little or no progress, but after they have attained a certain altitude they rush up at the rate of 2, and often 3 feet a day.

There was first exhibited the tree of the Vegetable-Ivory-Palm, from the nuts of which so many ornamental things are now turned. It comes from Magdalena, New Grenada; it is named Phytelephas macrocarpa. The Wax-Palm, Ceroxylon andicola, was discovered by Humboldt in the Andes of New Grenada; the full-grown stem is covered with a waxy substance, having the same properties as bees-wax. The visitor in London will observe that the streets are swept by a machine, with a brush of remarkable consistence. The tree which produces it is seen here, the Attalea fumifera; the coarse fibre of this and others separates from the base of the leaves.

The whole house is one vast magazine of tropical novelties, of which we can only mention one or two more. The Banana bears its curious fruit in abundance here, a single cluster often weighing 70 or 80 pounds. Perhaps the most remarkable object to the uninitiated will be found in the South African Elephant's Foot, Testudinaria elephantipes, so named from its resemblance, in the external surface of the gigantic root-stock, to the back of a tortoise, or to the foot of an elephant. Take it altogether, a visit to the Palm House at Kew will afford the visitor who has never been in the tropics the greatest surprise and pleasure. We have a good example of some palms, as well as the Elephant's Foot, in Philadelphia, in the house built for the purpose by James Dundas, Esq., which will afford "an epitome view," and should not be neglected by amateurs who visit our city.

In the "Succulent House," we found a great display of the Crassula tribe, and

Mesembryanthemums; many of the latter are remarkable for the resemblance in their foliage to the jaws of animals, whence they are appropriately named felinum, tigrinum, caninum, &c. The capsules of others have the same hygrometric property as the entire plant of the famous Rose of Jericho, or the hygrometric Club-Moss, opening in wet weather into segments, resembling the petals of a flower, and closing in dry; a beautiful provision of nature, by which the seeds sow themselves at the only season suited, in those hot sandy deserts, to their germination; after being gathered, they long retain this property, and may be made to open or shut, according as they are placed in a wet or dry atmosphere.

The Orchid house contains the specimens most in favor with cultivators at this time; the prices paid for them are sometimes almost fabulous. There is not a day in the year when some of them are not in blossom. Many are here seen attached to branches of wood, or placed in wire baskets, with moss and bark, or planted in the husks of cocoa-nuts, and suspended from the rafters, living, as it were, and flourishing on heat and moisture; the Vanilla, Vanilla aromatica, is one of these tropical Orchideæ. Its long narrow pods afford the fragrant vanilla of commerce; it is from the hot parts of South America, being exported from Vera Cruz to the amount of 40,000 dollars annually. The King Plant of the Cingalese, Anœctochilus setaceus, as rare as it is beautiful, is here in perfection; we saw it, too, lately in the stove of B. A. Fahnestock, Esq., Philadelphia; the foliage closely resembles brown-greenish velvet, with the most exquisite network of gold. Other allied plants are green, reticulated, and spotted with white.

In the Tropical Aquarium is exhibited a group of different plants especially characterized by the varied coloring or marking of the foliage, often called "painted plants;" among them, the Caricature Plant, Graptophyllum hortense, many of the spots of whose leaves bear a very accurate resemblance to the human face, more or less divine.—The fragrant lemon-grass will be remarked, and Sir William tells you it was a favorite tea with old Queen Charlotte; and he observes that the present queen takes an especial interest in these gardens. He lately sent her a basket of Osage oranges as a curiosity; "but," said the queen to him, with a pat of her fan, "how could you send such fruit for my table? Why, the lady-in-waiting cut one, and handed it to me; but really it was uneatable!" They do not ripen in England, and were an especial novelty there.

In the "Hardy Aquarium," among the greatest curiosities, is the celebrated Tussock-Grass of the Falkland Islands, Dactylus cæspitosa; it is considered one of the most valuable coarse agricultural grasses, and, having braved the droughts and cold, and heat of England for several years, will be naturalized. It is slow in growth, and slower to form its great tussocks; they and the mass of foliage constitute thickets where wild cattle and more wild runaway sailors find shelter and protection, and both obtain *food*. Two sailors subsisted some time on the raw young shoots of this grass, which are, moreover, boiled like asparagus; vicinity to the sea, an equable climate, and cool atmosphere are deemed essential to its perfect success.

In the Aloe House, there is much to see and wonder at, especially the two lofty specimens of the Old Man's Head Cactus (or Cereus senilis), 14 feet high; it is called Senilis from the quantity of old wiry gray hair which crowns the summit. There is reason to believe, from its slowness of growth, and the reports of Mexicans, that these old fellows are hundreds, probably a thousand years old. No perceptible increase of size has taken place in the long period of their residence at Kew; there they stand, two sturdy pillars, and there they may stand for centuries.

Our English lady friend now exhibited marks of extreme fatigue. We made an effort, however, to reach the Victoria Regia House; but nature could no longer support her frame, and down on her knees she fell, a curious figure, with her parasol expanded. Sir William was truly polite, waited for her to rest; and we then proceeded, saw a lily bloom, and somewhere in a tropical fern-house we gazed at other things; pencil, however, could no longer do its duty, and we only remember the Great Stag's Horn Fern. It grows in Australia on the trunks of trees, but here, from the surface of a plank against the wall; the young stage of it is a small green leaf or frond, lying flat against the wood. It thickens with every succeeding growth of leaf; and this addition is alternately right and left over the older leaves, which die and contribute to the nourishment of the plant. A second plant was purchased for twenty-five guineas for Syon House.

Though our notes are not exhausted, we must here close our "Day at Kew" with a mere allusion to the great extent and value of the newly planted Arboretum, which promises to be the finest the world ever saw. We shall be paid for our labor if we have imbued one reader with an impression of the vastness, of the variety, and the value of the products of the vegetable kingdom, every possible specimen of which may be here examined.

THE PEA BUG AND ITS ALLIES.

BY WM. N. WHITE, ATHENS, GA.

SEED peas raised in the United States are found, on opening, more or less infested with this insect, and especially is this the case with the garden pea at the South. Another species of the same genus (Bruchus) attacks the kidney bean and the cow pea, and is still more destructive. The Pea Bug seldom attacks the germ, but the bean is all eaten except the outer coat. The insect found in the bean is much smaller than the Pea Bug, but several occupying one seed. Clover seed I believe is sometimes rendered worthless by an insect similar to these.

With the pea and bean bugs I have little trouble; when gathered and *thoroughly*

dried, I put them in perfectly tight bottles, or earthen jugs, according to the quantity I wish to save for seed. In these I put a teaspoonful of spirits of turpentine or a lump of camphor, but I prefer the former, and cork them tightly. The name of the variety written on a card is fastened to the bottle by a piece of twine. When I wish to plant them, I find them on opening perfectly sound. The turpentine effluvia is fatal to the insect. If I wished to preserve a larger quantity, I should put them in camphene or turpentine casks, from which the contents had been recently drawn, and seal them tightly. This for seed. For the table, instead of the above mode, the beans are placed when dry in a brick oven, in shallow pans; after the bread is withdrawn, there is heat enough to kill the egg without injuring the quality of the beans.

OUR NATIVE WINES.

BY R. BUCHANAN, CINCINNATI, OHIO.

An opinion prevails in some of the eastern cities—doubtless encouraged by the importers of foreign wines—that our *native wines* are gradually falling into disuse. I am happy to say that this opinion is entirely erroneous. The demand for the still wines is now greater than ever, and for the sparkling wines, equal to any period previous. The financial troubles of last year somewhat interrupted the consumption of sparkling wines, but only to a small extent.

We have the gratification here of knowing that our own wines are rapidly displacing the foreign, and that the people are supplied with purer wines from our own soil, than many of the mixtures from abroad prove to be.

This is as it should be; why should we send our money thousands of miles abroad, to purchase an inferior article to what we can produce at home. There is no American spirit in that policy.

The vintage of 1855 was a light one; the average per acre not exceeding 150 gallons. We have in this vicinity about 1000 acres in bearing, which will yield 150,000 gallons. Half of this crop has been sold already, at prices ranging from 90 cents to $1 10 per gallon from the press. Part of it intended for sparkling wines, and part for still. Ten thousand gallons were purchased for the St. Louis market, the grape crop in Missouri having proved to be almost a total failure.

Our still wines sell here at $6 to $7 per dozen, and the sparkling at $11 to $12. Good still wines can be purchased by the cask at $1 25 to $1 50 per gallon, after the second fermentation, and when fit for bottling.

The introduction of pure native wines will do more in aid of the temperance cause than all the stringent "Maine Laws" that can be enacted; our experience thus far points to this remedy with great confidence.

GOOD AND BAD PRUNING.

THE annexed wood-cuts will explain the effects of judicious and injudicious pruning better than a lengthened disquisition. Fig. 1 represents a tree of thirty years' growth, which has been regularly and properly pruned. Fig. 2, a tree of the same age, which has been neglected as to pruning during its early growth, and has now been pruned in a way too frequently practised—namely, by sawing and lopping off the branches, after they have attained a large size. Fig. 3 shows the

Fig. 1.

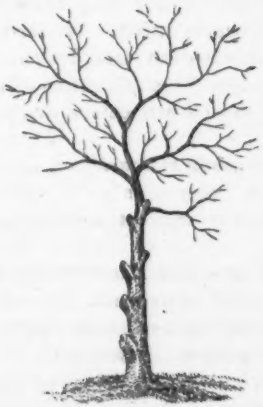


Fig. 2.

Fig. 3.

bad consequences of neglecting early pruning, in the case of a plank cut from an ash-tree which had been pruned by lopping off the large branches many years before it was felled. The cuts in this case had been made several inches from the bole, and the branches being very large, the stumps left had become rotten. The enlargement of the trunk had not, however, been stopped, for the new wood had covered over all the haggled parts, in some places to several inches thick. Yet the effects of the previous exposure to the action of the weather, by injudicious pruning, is strikingly marked by the decayed state of the parts connected with the branches which had been amputated; progressive pruning of deciduous trees, commenced while they are young, if it is to be practised at all, will produce no such blemishes when the timber is cut up. In a school for gardeners, or indeed in every school, these effects should be demonstrated by examples of bad pruning; the best collection of such is to be found in the economic museum of Sir William Hooker's foundation at Kew Gardens, but it would be very easy to collect specimens for exhibition at horticultural societies and State or county fairs.

FLOWERS AND BOTANICAL NOTES.

BY W. S. COLEMAN.

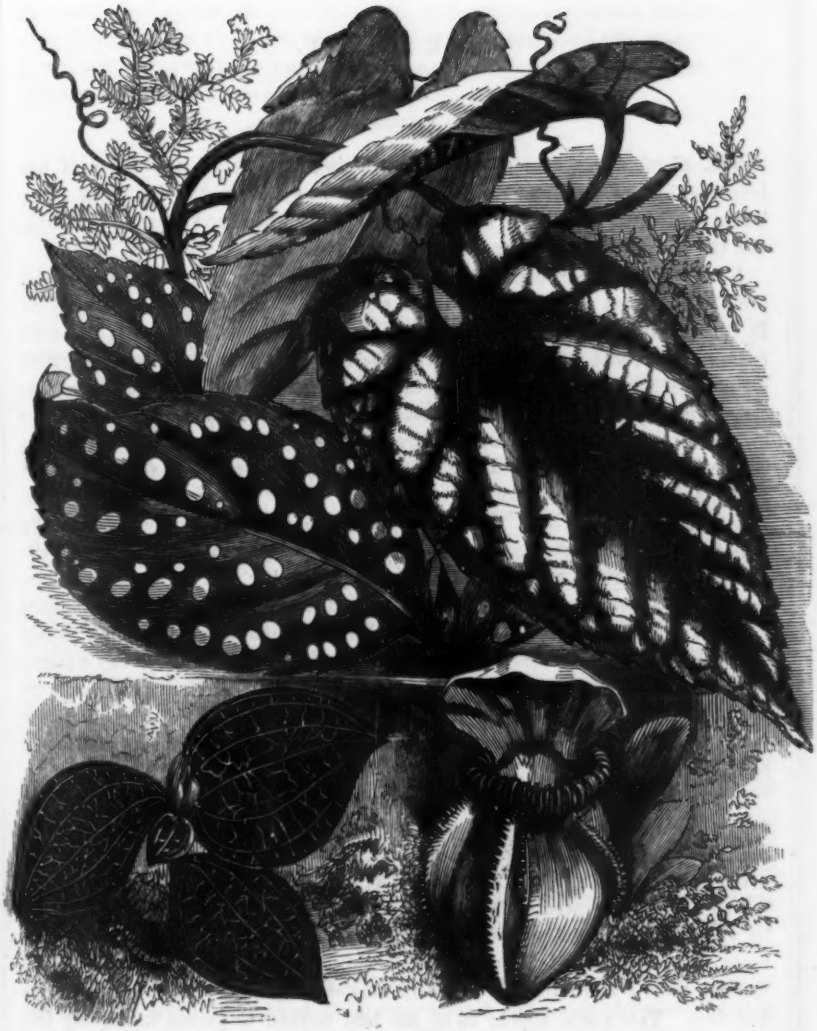
Our group is composed of some of the more remarkable forms of leaves, being a selection from what the gardener calls "foliage plants," or plants which depend rather on their leaves than their flowers for their beauty or interest; in which points many of them are hardly excelled by any tenants of the conservatory, besides possessing the great advantage of remaining in equal perfection all the year through. Some of these rival in the richness of their tints the brightest flowers, such as *Dracæna*, *Caladium*, *Calathea*, and *Cissus discolor*. We figure the leaves of the last mentioned; but no engraving can show the beautiful variety and gradation on the rich velvet of its upper surface. The centre rib and principal veins are marked by various shades of purple and black; between the veins are silvery patches of white, and towards the edges the purple softens off into a lovely subdued green, forming altogether one of the most harmonious little pieces of coloring with which Nature indulges us.

The pearly sonnerila (*Sonnerila margaritacea*) is one of the most charming of recent introductions. It has glossy green leaves, studded over with lustrous pearl-like spots, and in the summer is ornamented with a spike of pink flowers of much beauty.

The curious plants from Java, called *Anæctochilus*, well deserve a place in any collection where sufficient heat is maintained. One of these plants at first sight gives the idea of a number of strange insects congregated on the ground, each leaf being so marked and shaped as to resemble the closed wings of a large beetle or moth—blackish green or brown, with golden or silvery veins, being the usual coloring. *Anæctochilus setaceus* is the species figured. (See page 118.)

Several species of club-moss—half moss, half fern-like feathery little plants—are very ornamental, for edging the aquarium, and for other purposes where their fresh bright green is acceptable. We figure the creeping-rooted club-moss (*Lycopodium stoloniferum*).

There are several genera of plants bearing pitcher-like appendages to their leaves—that best known being the genus *Nepenthes*, the old pitcher-plants; but there is a little New Holland bog-plant, the Australian pitcher-plant (*Cephalotus follicularis*), of comparatively recent introduction, which, though of very small size, is equal in interest to any of the others. It produces a circle of pouches or pitchers of curious construction, resting on the ground, each being provided with a membranous lid; from the centre rises a spike of small white flowers. To the list of plants remarkable for their foliage we can now add one—perhaps the greatest curiosity of all—the extraordinary "Lattice plant" (*Ouvirandra fenestralis*), lately brought from Madagascar by a missionary, and now in the possession of Messrs. Veitch. It was figured and described in the *Horticulturist* for February.



Anœctochilus setaceus. Cissus discolor. Lycopodium stoloniferum.
Sonerilla margaritacea. Cephalotus follicularis.

THE HOLLY.

BY W.
BALTIMORE.

THE *Horticulturist*, of late, has been bringing into public notice one of our brightest and most attractive evergreens, our own holly; with its living green leaves contrasted with its red berries, and, at times, when snow mantles the earth, and the red peeps from under the white cover, what can be prettier!

I have devoted particular attention for some years to this tree. I obtained them from the flat portions of our State, adjacent to the Chesapeake. I removed in March, six years since, half a dozen without any particular care, not even covering the roots, a day elapsing from the time they were dug until they were set in a nursery, on the north side of the barn, where but little sun reached them. All of these died save one of the finest looking, which was removed in a year to its present position on the lawn, where it is much admired, particularly at this season, as it luckily is a bearer of berries. The following autumn, with four boxes, about two feet square, I went into the woods and transplanted four fine hollies, one into each box. Towards spring two died, and in April I carefully took the sides out of the boxes and set out the remaining two, with the earth adhering, on the lawn; one died in the summer, the other still lives and flourishes, though not a berry bearer. Again in August I had a dozen young plants, from six to twelve inches in height, taken from the wood and planted at once, closely in a box. As soon as received, they were planted in the nursery, well watered and mulched; here they remained for three years, and last September six were removed, with balls of earth, and set out on the lawn. I have still four small ones in the nursery, losing only two of the lot; these young plants have grown well for hollies.

In the month of June of last year, I selected ten fine trees, from four to seven feet high, growing on the edge of a thick pine forest, and after trimming the branches where they were out of shape, had the lateral and tap roots carefully cut with a sharp spade, and left the trees just as they stood, intending to remove them last fall, but was prevented from doing so, and will take them up in the spring; by which time, two years having elapsed, they will have formed a mass of fibrous roots, to which the soil will attach itself whilst they are being moved. On examining them a year after they had been thus severely dealt with, I found but one had died. This would appear to be the best method to pursue in moving this tree.

I will hereafter give you my experience with reference to these. Of course, it is very advisable to select such trees for removal from the forest, as have been most exposed to the sun.

I have always been successful with my rose and heliotrope cuttings, made in

July and August. They are set in boxes partially filled with light soil, with an inch and a half of fine sand over the earth—the cuttings are pushed into the sand until they reach the dirt; they are then placed in the shade and well watered; this is repeated whenever the top of the sand *begins* to look dry, and not before. The cuttings should not be set too closely together.

SWEET APPLES.

VERY suggestive subject title to the appreciator of "Apples and milk," waking up delicious memories of the simple good things enjoyed in younger years—perchance forgotten or neglected in later days of more studied epicureanism.

The suitableness and healthfulness of fruit as an article of *diet*—not as a mere luxurious come-between or after-course, when hunger is appeased and the variety and quantity of food already taken is quite equal to the power of right digestion—is much lauded, highly recommended at the present day.

To such an innovation the veriest gastronomer can scarce object.

Among the *staples* of "fruit as a diet" what more deserving of epicurean encomium than baked sweet apples? Surely it should rank as a standard among appetizing dishes. What an agreeable accompaniment to the farmers' tea-table in harvest time.

And these may be enjoyed the year round, saving an interim of a few months when the smaller garden-fruits are in plenty, and can delightfully atone for their absence.

A fine collection suiting this soil and climate might embrace—"Sweet June" and "Sweet Bough;" "Golden," "Jersey," and "Haskell Sweets;" "Summer Sweet Paradise" and "Autumnal Swaar;" "Bailey," "Tallman," "Ladies," and "Green Sweet"—and you have them from mid August to May, ripening in the order in which they are named.

There are many phases of digestive disarrangement where acids prove so harmful that the invalid is obliged to abstain almost entirely from fruits—then the luxury of a tender juicy sweet apple is readily discovered and appreciated.

Many seem indifferent to all but "sour apples;" they surely cannot know anything about the deliciousness of a really fine dessert sweet apple.

ELSIE ——.

WAUKESHA, WISCONSIN.

CULTIVATION OF LICORICE.

Synonyms.—Glycyrrhiza glabra, Diadelphia decandria.

BY WM. R. PRINCE, FLUSHING, N. Y.

THE Licorice is one of the most important plants that are destined to be added to American agriculture, and it merits at our hands an early adoption on account of the facility of its culture, its great usefulness for various purposes, and the large profits it yields to the cultivator. When the high priced lands of England are profitably devoted to it, how much more profitable must it prove, where land is plentiful and cheap, and where, above all (as is the case in several of the Western States), the soil is naturally permeable, free from stones, and no manuring required. It is indeed mortifying to American pride to witness the many thousands now paid to Europe for an article like this, so simple in its culture that we ought to be the largest exporters of it, thus adding another item to our *Granary of the World.*

The Licorice is a deep-rooting perennial plant, of the Leguminosæ, the roots creeping to a considerable distance. It has herbaceous stems four to five feet high, with composite dark green leaves.

The flowers, which are blue, come out in axillary spikes during July or August. It has long been extensively cultivated in Spain, and from the commencement of Queen Elizabeth's reign it has been largely grown in various parts of England.

The soil for the Licorice should be a deep sandy loam, or other light soil, and be trenched by the spade, or by a subsoil plough, or by the aid of both, two to two and a half or three feet in depth, and well manured. The light permeable soils of our Western States, which are enriched by nature, are the soils pre-eminently suited to the most profitable culture of this plant.

The propagation is by cuttings of the root, and usually the small side roots are taken for this purpose, and made into cuttings six inches in length. The planting season may be either autumn or spring, as most convenient.

The cuttings should be planted in rows 2½ to 3 feet asunder, and at the distance of 18 inches in the row. During the first season the plants do not attain a height of more than a foot, and the space between the rows may be used to grow onions, lettuce, beans, or similar vegetables. Keep the ground free from weeds, and, after the subordinate crop comes off, hoe and dress it well, when for economy a horse-hoe or cultivator may be used. During the second and third seasons, a crop of vegetables covering less width than the first may be grown, each year allowing additional space to the increasing stems of the Licorice. Every autumn the haulm should be cut and removed after it becomes withered. As this plant spreads its roots rapidly in every direction, they will form a complete mass, yielding immense crops.

At the end of the third summer's growth, the roots will have increased so as to be taken up, which is usually done by commencing at one side of the field and trenching over the ground. The roots can be immediately sold to the brewers, druggists, and other consumers and venders; or they may be preserved in sand till wanted for use. If, however, they are intended for transportation, they should be dried and tied in bundles.

Licorice is used very extensively in brewing porter, and in medicinal, and various other preparations, where saccharine matter of this description is desirable.

WHAT MAKES A DESERT.

BY YARDLEY TAYLOR, VIRGINIA.

IN a late number of the *Southern Planter* is an article, credited to *Hovey's Magazine*, by Wilson Flagg, on "trees—their general character and advantages." The object of the writer appears to have been, to point out the beauties and the advantages of our forest trees, and to encourage their propagation. Too much cannot well be said on this subject; pleasure and profit would be promoted by it, and most of what is said in this essay is well said, but there is one view taken that appears to me to be incorrect. In objecting to the destruction of our forests, the writer says: "The consequence of depriving a country of its wood, is the drying of the soil in about the same proportion; and were a country to be completely deprived of its timber, in the interior of a large continent, it would be converted into a dry desert." This assertion does not appear to be supported by facts. It may be asked, how came the interior of any continent to be covered with timber at all? The earth was formed before vegetation could have grown upon it, and were it even now deprived of timber, would not the same cause again produce it, that produced it at first? All parts of the earth appear to be composed of very near the same inorganic matters, and under the same circumstances would have produced nearly the same results. The rocks and sands of the desert of Sahara, had they been subjected to the same influence of rains and moisture that the more central portions of Africa along the line of the equator have been, there is every reason to suppose would have been equally productive. There are general physical causes, acting over every part of the earth's surface, and these causes, when fairly understood, will account for the varied effects we behold.

Why are the eastern sides of the Andes Mountains in South America covered with a most luxuriant vegetation, and deluged at certain seasons with rain, while

in the same latitude on the western side of the same mountains it never rains, and vegetation can only be promoted by irrigation.

The researches of Herndon and Gibbons, in their exploration of the Amazon River of South America, fully explain this phenomenon. The tropical current of air, flowing as it does along the equator, from east to west, carries with it from off the Atlantic large quantities of moisture; this is gradually distributed across the continent, until reaching the barrier of the Andes Mountains, where the accumulated vapors are precipitated in heavy rains, while the air, in passing over those snow clad summits, has every particle of moisture congealed, and precipitated in snow; so that when the air reaches the western side it is entirely deprived of moisture, consequently there can be no rain there. In some parts of the earth, the winds blow in one direction for six months of the year, and in other directions for the other six months. Along the equator the current of air is from east to west, while in the northern temperate zone, the general current is more from west to east. Here, however, there are modifying influences, such as ocean currents, mountain ranges, inland lakes, &c., that prevent any uniform currents of wind; hence we see that variableness in the direction of the current of air so valuable in the temperate regions, making far less deserts in them than where the currents of air are more uniformly in one direction.

It is more than probable that the extremes of heat and cold would be greater in a country deprived of its timber, but it by no means follows that the rains would be less frequent. Dews are heavier in cultivated valleys than in those covered with wood, and there is reason to believe that a larger portion of the rain penetrates the soil in a cultivated field than it would do if in forest. It has often been observed that springs augment in volume as the land around becomes more cleared of its timber.

There is doubtless much yet to learn as to the reasons why some portions of the earth's surface are productive, and others are barren; but it is hardly consistent with what we do know, to assert that to deprive the interior of a continent of its timber would render it "a dry desert." It never could have been anything but a "dry desert" if such would be the effect.

NOTES ON PEARS.

BY JOHN B. EATON, BUFFALO, NEW YORK.

WANT of leisure must be my apology, Mr. Editor, for not sooner responding to your request for more "Notes." The past has been an unfavorable season for testing new varieties, it having been remarkably cool and backward, with a larger proportion of moist weather than usual. All fruits were much later in ripening than ordinarily, and many sorts did not attain their best flavor.

Pears made an enormous growth, and have been generally free from disease and the attacks of insects. The severity of the winter of 1854–5, combined with the cool and moist summer, appeared to have destroyed so many of the latter, that it was quite an uncommon occurrence to find enough of them to cause any serious injury.

The blight has not prevailed to any great extent, that I have observed, having seen but few thus destroyed by it, except in one instance where two rows of *Glout Morceau* (in the nursery) became affected, and nearly every tree for some distance was destroyed. This variety is more liable to the disease than any other that I have tried, except *Colmar d'Aremberg*, and it is rarely that a tree, which has been attacked by it, can be saved.

Several of the varieties noticed by me in a former article, as then fruiting for the first time, have, this season, proved materially different, some of them being much finer than last season, among these are—

Ananas d'Été, larger than before; more inclining to an oval form, and much superior in quality. It is a beautiful pear; not very fine grained, but melting and juicy. "Very good;" ripe about the middle of September.

Beurré Goubault was not as good as last year, being rather watery. I do not think that it will prove to be of much value. Good; middle or last of September.

Bezi de Montigny, rather larger than usual, and "good;" first of November.

Doyenné d'Été, although small, is "very good;" not so large or so highly colored, however, as I had been led to believe; beginning of August.

Dearborn's Seedling is too small, and too apt to be insipid to be entitled to much consideration. I scarcely think it worth cultivating.

Dumortier was, this season, of nearly medium size, and really "good;" beginning of November.

Easter Beurré commenced ripening in November, with most of our winter pears. A few specimens are, however, still in tolerable preservation, but will not probably last beyond the middle of January. I have yet seen no indications of its being "difficult to ripen."

Glout Morceau is, in appearance, very fine this year, but I have not yet discovered an eatable specimen. They are without flavor, and inclined to decay.

Gray Doyenné, not so good as it should be, from what cause I cannot tell.

Le Curé, very large, and ripe in November; but entirely destitute of flavor, and quite coarse.

Oswego Beurré is a very handsome russet pear; but I have, so far, found it quite acid and disagreeable; middle of November.

Stevens's Genesee, although large and handsome, did not ripen well, and some specimens rotted at the core. I have heard from several quarters that it has, for two or three seasons past, been much affected with this same rotting. If it should continue to do so, it will soon lose its high reputation.

Seckel, on pear stock, was very small, and not so high flavored as usual. On quince, very large and very fine.

St. Michael Archangel does not come up to its reputation. It is, so far, quite indifferent; middle of November.

Suzette de Bavay has done better than usual. Some of the specimens were of nearly medium size, and although rather coarse, juicy, sweet, and good; but very many are so small as to be quite worthless. It has been in eating since about the first of December, and will apparently keep for some time yet.

White Doyenné has been, this season, more severely affected with the spotting and cracking to which it is so liable at the eastward, than I have ever known it. Fine specimens were really scarce, almost all being more or less injured. A large quantity of fruit has been utterly destroyed; much that, when gathered, appeared nearly sound, falling a prey to the bitter rot when approaching the period of maturity.

Winter Nelis was finer than I ever before saw it; quite large, and well colored. It was ripe in November, and did not keep long.

Among the varieties, which have fruited with us the past season for the first time, were the following:—

Belle Caennaise. A medium-sized, dull, green fruit; sweet, but rather coarse and indifferent. Middle of November.

Bezi d'Esperen. Rather large; irregularly formed; dull greenish-yellow, juicy and sweet; but wanting flavor. Last of October.

Beurré de Capiaumont. Small, russeted, melting, subacid, and very good. Last of October.

Beurré Superfin. Large, dull yellow, melting, juicy, subacid, and very good. First of October. This fruited once before, but being blown off the tree, did not mature. It is evidently a fine pear.

Bonne des Zees. A large, dull-looking fruit, and wanting in flavor and juice. Middle of November. A tremendous bearer; but falls far below its eastern reputation.

Cushing. Small and worthless.

Duchesse de Berri. Small, a little coarse-grained, melting, very juicy, sweet, and rich. Very good. Middle of September.

Duchesse de Mars. A rather large, dull green, disagreeable-looking fruit; a

little coarse-grained, but melting, juicy, and sweet. Good. Middle of November. These specimens were from a young tree on pear stock.

Doyen Dillen. A very handsome, oblong pear, of good size; pale yellow, juicy, and sweet. Very good. First of December.

Doyenné d'Alençon. Medium, or rather small; skin thick, very rough; dull green and russet, with a faint blush; a little coarse-grained, juicy, tender, and subacid. Good. Last of November. An extremely unprepossessing fruit in appearance; but one which promises well.

Doyenné Boussock. Large, yellow, rather coarse. First of October. These were the first perfect specimens which our trees have produced, and they were quite inferior to some which I have tasted elsewhere, and not unlike a *poor* specimen of Stevens's Genesee.

Delices d'Alost. A rather large elongated pear, somewhat resembling *Doyen Dillen*, but with more red in the sun. It is, however, inferior to it; rotting at the core before attaining ripeness.

Des Chasseurs. Medium, pyriform, pale green; marked with russet; juicy and tender, but inferior. Middle of November.

De Lepine. Medium, obtuse-pyriform; dull green, with a faint blush; coarse and astringent. Last of November.

Enfant Prodige. Cracked so badly as to be quite worthless, and did not attain its full size.

Fondante de Noel. Did not ripen well, and was quite small.

Josephine de Malines. Medium, obtuse-turbinate, dull green, melting, juicy, and sweet. Good. Middle of November.

Jones. Rather small; acute-pyriform; wholly covered with cinnamon russet, with a rich blush in the sun; juicy, buttery, and sweet. Very good. First of November. A very handsome pear, which bore a fine crop, and gives promise of considerable excellence.

Jersey Gratioli. A medium, or rather large fruit; yellowish-green, with considerable russet, and a faint blush rather coarse and gritty, but very juicy, melting, and subacid, having much of the Brown Beurré character. Very good. Middle of September. Bore an abundant crop, and promises well.

Kirtland. Rather small, roundish, cinnamon russet; a little coarse, melting and rich. Last of September. Our specimens were rather indifferent; but some, which I received from a friend in the vicinity, were of full medium size, and "very good." It will, I think, prove a valuable variety.

Louise de Boulogne. Small, greenish-yellow, with a little russet; melting and sweet. Good. First of October.

Osband's Summer. Small, obovate, pale yellow and red; a little gritty; juicy, melting, and sweet. Very good. First of September. This was evidently gathered too early, as it had not acquired its proper size.

Rapelje's Seedling. Medium; dull yellow, coarse, gritty, juicy, and sweet. Very good. First of November.

Rédelte. A large, yellowish-green, russeted pear; juicy, melting, and sweet. Good. First of November.

Soldat Laboureur. Began to fall from the trees in September, and did not ripen, after being gathered.

Theodore Van Mons. Proved to be Doyenné d'Été. A variety received for Charles Van Mons, but supposed to be Theodore Van Mons, proved worthless (from a standard), being hard, dry, and flavorless.

Van Assche. Medium; greenish-yellow, with a faint blush; rather coarse and gritty; tender, juicy, and sweet. Good. First of October.

Vicompte de Spoelberch. Indifferent. First of November. This fruited very well on the quince, and some of the specimens were of pretty good size, but with little flavor. It, as well as many others of the varieties named, will probably improve as the trees acquire age. The first fruit rarely being a fair test of the excellence of the variety.

JANUARY 7, 1856.

CRITIQUE ON THE JANUARY HORTICULTURIST.

BY JEFFREYS, WESTERN NEW YORK.

AND so, my instructive old friend, you are nestled down in soft, sunny, drab-coated Philadelphia! the land of rich gardens, generous soils, and skilful cultivators. It is well. Since your sudden departure from Albany, where a most sad event deprived you of the genial spirit which hovered over your early years, and directed your vigorous manhood, I learned that you had taken up your abode among the tree-growers of far away Rochester and the lakes, where I had almost lost sight of you; but now that you are emerged into the cheerful sunlight of the Atlantic, I hail the continued vigor of your career with pleasure. We once had pleasant talks together, and if you do not object, in my old way and fashion, we will renew our wonted intercourse—premising, by the way—that if I grow tiresome at any time, the slightest intimation will silence my pen. To commence, then, I send you my CRITIQUE ON THE JANUARY HORTICULTURIST.

On Gardeners and Experimental Gardens.—A capital idea, Mr. Editor, as any one who knows what trouble we poor mortals, who depend upon the labors of professed gardeners, have had in obtaining those of the right kind, will concede. A *competent* gardener, *up to his business*, must be a man of *mind;* and a subordinate, uncomfortable situation, such a man will not occupy—any longer than he can do better. The gardener himself being right, by all means give him a direct interest in his labors, through the produce of the garden, if a market exist in the neighborhood where he can turn such produce to profit. It thus gives him a responsi-

bility, a character, and a consequence. It stirs his pride, promotes his emulation, and increases in him a striving to improve constantly in his vocation. Why, sir, many a time have I known the toiling, pains-taking gardener, intelligent in his line, far more worthy of companionship than the conceited *parvenu*—there is now and then one such—who employed him, and kept him in a degraded position, while ministering to his own inflated pride and accidental wealth. Many an unknown Sir Joseph Paxton, might have risen to fame and eminence through the kind word fitly spoken, and the generous encouragement of an appreciating employer. Of *bad* gardeners—*imported*, at that—we have enough, in all conscience; but we can rapidly have better ones, by taking the pains to make them, and showing them that their endeavors are appreciated by their employers.

Gardening, in its elevated sense, is one of the fine arts, and no one not thus estimating it, need suppose that he can command the labors of a Praxiteles in that line, at the same rate of compensation he does those of the boor who blasts out the shapeless marble from the quarry.

Mr. Dowell's Rhododendron.—A most gorgeous thing. When you have tried it, just let us know whether it will stand, unhoused, our northern winters. If so, we must see about it. A *perfect* Rhododendron is the *summum bonum* of floral beauty.

Cultivation of the Raspberry.—Excellent. Raspberries—to my notion—are the best summer fruits we have. So easy to grow, that everybody, with a little patch of land, can have them—a great argument in their favor. But there is one objection to those you describe, Mr. Hughes—that of their sensibility to frost—inseparable, probably, from varieties so choice. Now, I grow a most excellent, strong, red raspberry, prolific in bearing, delicious in flavor, and a month in season, whose wood is hardy as a currant bush. It is not our common field red raspberry, either. The man I had it of said it was the Antwerp; but it is not the red Antwerp of the nurseries; yet quite as good, and I would not exchange it for any of the less hardy kinds, if I could have but one. I hope that Dr. Brincklé, among all the new varieties with which he has blessed the world, will *invent* a hardy one, of choice flavor.

The Lombardy Poplar.—Rather sensible in Mr. Allen. I hope he has the courage to practise what he so well preaches, by planting them in his grounds. For my part, I always did like the Lombardy Poplar, although it has long been an outcast with some people professing *high taste* in tree culture. As he heads his article in the plural, and has described only one, I hope he intends to show us the propriety of renewing some other "old fashioned" varieties. If so, he will do the public a service. Suppose you try your hand, Mr. A.?

Downing's Familiar Notes and Letters.—The pleasure of reading them is dashed with sadness that so accomplished a spirit can no more be seen and heard by those who loved him so well. At his death no man, in his peculiar walk, on this side the Atlantic, gave so much promise of usefulness as he. And there is none who has yet given promise to take fully his place. His genius was a natural one,

highly cultivated, and rightly directed. I trust we may ere long discover one on whom his mantle has fallen.

Frontispiece—an old house newly modelled.—This is a very sensible affair; more so, by long odds, than three-fourths of the starched up things that appear in print from some of our professional architects. It so well suits me that I have no disposition to criticize it, further than to say that I don't fancy that round-topped window perked up into the eaves of the tower front. I suppose, however, it is to balance the bay window below, and give light to the attic, or garret, which might have been done with better architectural effect by a roof light, as the room communicating with it is not wanted for the occupation of either family or guest. The upper kitchen is a grand reform. Stick to the *upper kitchen*, Mr. Smith. Let your future efforts but be in as good taste as this, and you will succeed in "country" architecture.

Railroads in a social point of view.—A mighty good thing for the country, bad as some of them are, even if the stockholders do cry over their depleted pockets. Railroads have added twenty-five to fifty per cent. to the agricultural wealth of the country at large, and given you, and me, friend Horticola, and many thousands of others, a chance to enjoy life in the pure air of the country, while our daily toil is mixed up with the stench of the cities. These things will all find out their true interest by and by.

New Pears.—Why, my dear Doctor, you are so flooding us with new pears that we shall be utterly at a stand in our choice of what to cultivate, for the simple dozen varieties of which we stand in need. But it is "the trade" of the nurserymen to give us *new* things; and if they but prove *good*, no one need complain that so numerous varieties are offered for his choice.

A day at Kew Gardens, No. 1.—Why, Mr. Editor, will you tantalize us with descriptions of what we shall never see, and what, with all our longings, we never can have, on *this* side the water? It is pleasant to read them, however, and thus we will look with much interest for Nos. 2, and 3.

Gossip from the Northwest.—"Go ahead," gentlemen. You have it all to yourselves in that quarter. But don't "crow" too lustily over your prodigious growths of limb, and great big fruits. You are hardly "out of the woods" yet. The blight will be after you presently, as it has been after us—and possibly *stay* with you—in the *pear* line; and the curculio, and the apple-borer, the peachworms, and the yellows. They are all on their westward travels. Recollect you are only ten years old out there in Iowa. So, don't boast too abundantly. I've suffered a little in that line myself. How is the *flavor* of those aforesaid large fruits, compared with the compact, medium-sized specimens? Let us have a *tasting* party at the pomological meeting next fall at Rochester, when I hope we shall all come together.

THE LOWELL WIRE FENCING.

THIS fencing, manufactured by J. E. Butts & Co., Boston, Mass., we are disposed to think, would be found very useful in many places where it is unknown. The proprietors say:—

Our Wire Fencing, represented by the within diagrams, for economy, strength, closeness, portability, elegance, and durability, may challenge competition with any fencing in the world.

Figure 1 is a diagram of a section of our fencing, with the roll from which it is unrolled. The posts are of wood, set from eight to twelve feet apart; but they may be of iron, or stone; or trees may be used in lieu of posts, where convenient. Rails are entirely dispensed with. The fence is raised from 4 to 12 inches from the ground, and is drawn straight and tight, or kept upon an exact level, or regu-

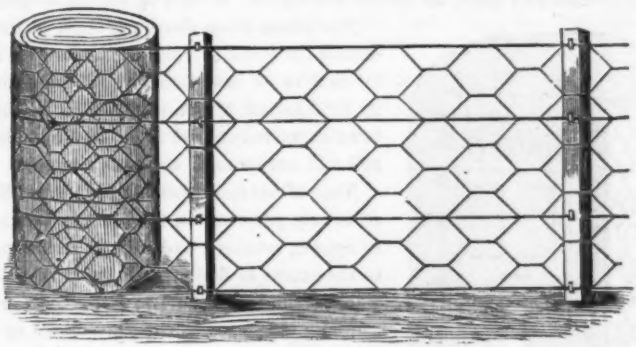


Fig. 1.

lar inclination, from end to end. Care is required to put it up substantially and neatly. Staples about three inches in length secure the fence to the posts; each lateral (or horizontal) wire being clasped with a staple at every post. But bolts, or screws with hooked heads, or wire twisted round the posts, answers every purpose. There are several descriptions of this fencing.

No. 1 is 3½ feet high, with meshes (or open spaces), 3 inches square; 4 lateral wires, of No. 10 wire (one-eighth of an inch in diameter), run through the body of the fence, which is No. 14 or 15 wire; and the weight is 10 lbs., and the price $2 per lineal rod (16½ feet.)

No. 2 is precisely like the first kind, except that there are but two lateral or straight wires in it—one at the top, and another at the bottom of the fence. This is 9 lbs., and $1 75 per rod.

No. 3 is 2¾ feet high, with meshes 3 inches square; it has three lateral No. 10 wires, with the body work of No. 14 wire. It is 7¼ lbs., and $1 50 per rod.

No. 4 is precisely like the third kind, save that the lateral wire in the middle is omitted. It is 6¾ lbs. and $1 37½ per rod. These kinds are the best for cemeteries, gardens, door-yards, heneries, etc.

No. 5 is 16 inches high, with meshes three inches square; there are two (outside) lateral wires of No. 12 wire; the body is of No. 15. It is 4¼ lbs. and 75 cents per rod. It is used for ornamental garden work.

No. 6, extra, is 3¾ feet high, with meshes 6 inches square; it has four lateral No. 8 wires, with body work of No. 11 wire. It is 10 lbs., and $1 50 per rod. This kind makes the best and most practicable barrier against cattle, around fields, along canals, railroads, etc. Some of the railroad companies have already adopted it. Indeed, it is emphatically a railroad fence.

No. 7 is precisely like the sixth kind, except that the two middle lateral wires are omitted. It is 8½ lbs. and $1 per rod. It is the cheapest sheep fence that can be erected; and, like the second kind, it is admirably adapted for trellis work for grape-vines and roses, for garden arbors, etc., as seen by second diagram.

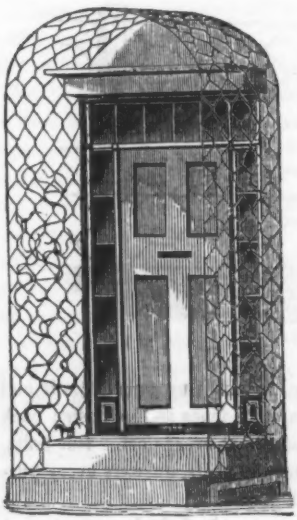


Fig. 2.

The prices given above are those at which we deliver the fence in rolls at the Boston Depot, for cash *in all cases;* the cost of transportation to be defrayed by the purchaser. A roll contains about twenty-five rods; and less than one roll will not be sold, unless as a sample.

None of our fence is consigned; but a discount of twenty per cent. on the above prices is made to agents, retailers, and others, giving an order to the extent of $500; and any person or firm, who will make an effort to introduce our fence, can have an agency in any place where an exclusive agency is not already established, on application to the proprietors, giving suitable references as to his commercial responsibility. Retailers and agents are expected to advertise. An extensive field for the operation of agents is still open, especially in the West.

Our fencing is varnished black with asphaltum varnish, before leaving the mill; the varnish gives it a beautiful appearance, and protects it from the influence of the weather—from rust. If preserved from oxidization by this varnish, or by paint, or tar, or japanning, or galvanizing, the fence will *never wear out;* but the varnish will require renewing once in every four or five years.

This fence is impassable to all stock; it does not "hold" the wind, and can never be blown down in a gale; no flood will wash it away, since it offers no resistance

to the current; it excludes none of the solar rays, so conducive to vegetation; it does not confine the heat, like board fences and walls, which is prejudicial to crops; it does not occupy and exhaust the soil, like hedges; it requires no repair, save an occasional replenishing of the varnish, and wherever it has been tried, it has given the most unqualified satisfaction. This last fact is attested by many hundred letters now in the hands of the manufacturers, written by scientific and practical farmers in all parts of the Union.

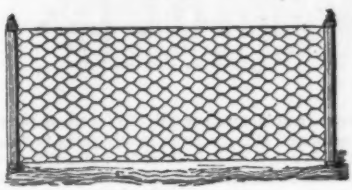


Fig. 3.

Our Window Netting is of various widths from 13 to 28 inches; its meshes are one inch square; it is of No. 17 or 18 wire, and varnished like the fence, and sold (at retail) at *seven cents* per square foot, being less than one-half the usual price.

Fig. 3 represents another kind of this fencing, from sixteen inches to four feet high, with meshes of three inches. The body of this fencing is of No. 25 wire; the price from 75 cents to $1 50 per rod. This fence, in its several varieties, makes an admirable sheep, poultry, and garden fence; that four feet high serves for heneries.

[We should advise that this wire be galvanized, to prevent the necessity of painting or varnishing it every year or two, which would not only be expensive, but difficult when covered with vines.—Ed.]

EDITOR'S TABLE.

Gossip.—It would be as impossible to pack away in this number all the favors of correspondents as to inclose the entire wardrobe, bonnets and all, of a large family going to "the Springs" in a pair of old-fashioned saddlebags! We ask a little indulgence; meantime we "*cram*" a little to gain space.—The *Gardener's Chronicle* asserts that it is not necessary to force peas into *bearing* to get the best pea soup; the leaves make as good or better *purée* than the green peas themselves.—All accounts agree in stating that orchids have generally been subjected to too much heat; a few require this, but a large proportion are natives of climates where the thermometer falls below zero; as commonly at 30 feet as at 10,000 feet above the level of the sea. By thus forcing the plants beyond nature, the luxurious vegetation soon perishes.—A *Bee-Keeper's Guide* recommends three hard-named plants as affording good feeding for the bees. A correspondent says none of these can be found out of hothouses, and recommends that the cottage bee-keepers should live in "Cottages ornés."—The *Gardener's Chronicle* speaks well of Professor Fisk's entomological researches in New York.—Calceolarias, as exhibition plants, are losing ground abroad, while Gloxinias have made a decided advance. Ferns are the fashion, and plants remarkable for fine foliage are coming into vogue.—The Cyane pine-apples are in much favor, and the Stockwood Golden Hamburgh Grape, figured in the February number, all admit to be an acquisition.—The Ugenia Ugni has ripened its fruit well in England, and seems destined to become an important plant; when the fruit is perfectly ripe, the flavor bears a close resemblance to a good pine-apple; "a rich aromatic and indescribable flavor, being something between that of a good Pine and the Hautboy Strawberry, and even in gathering this, rich odor is left on the fingers."—A grower of Camellias who wishes large and perfect flowers will carefully *thin* to one bud at the point of each shoot.—The Pampas Grass introduced into England attains the height of ten feet, with spikes of silvery feathers sparkling in the sunshine; it is pronounced "a noble ornamental hardy plant for a lawn, with handsome drooping foliage."—Thyrsacanthus rutilans is a favorite, with its pendent racemes of scarlet blossoms.—An instrument for pruning trees is announced; it elongates the handle or shank of the chisel and slips it loosely into a hole made in the extremity of the pole; if the chisel is now driven into the limb, it sticks fast, and allows the pole to be drawn back a little, and thrust forward again against the chisel, with the same effect as a mallet; the end of the pole is furnished with a thimble to prevent it from slipping.—The *Southern Cultivator* for January has a long article on Fish and Fish-ponds, by Dr. Bachman. The propagation of fish is a most important subject, destined to prove of immense value, and but just now begins to attract attention.—Stewed lettuce, with gravy and white sauce, says Chambers, is a dish for an epicure, and the roots of celery, generally thrown away, make a princely vegetable when boiled.—At the Horticultural Society's sale at Chiswick, a *Laelia* superbeum brought a hundred and fifty, and a rare orchid three hundred and twenty-five dollars; the latter was purchased by the Duke of Devonshire.—The Imperial Agricultural Society of Paris has been trying to discover why seeds, apparently all alike, do not germinate all at the same time. The conclusion is that the latest are so tightly inclosed in their envelope, as to prevent or check the penetration of moisture, and they are now inquiring whether the tardy seeds are the heaviest or the lightest, and whether they are obtained from one part of a plant more than another.—A French savant, M. Basset, says, that the virtues of beet-root are not half appreciated; that it is far more profitable than grass in the feeding of cattle, and contains such a variety of chemical products as to make it better worth cultivation than agriculturists generally believe.—The Belgian government offers a prize of two thousand dollars to any one who will discover a way to make starch for manufacturing purposes, from a non-alimentary substance. Enormous quantities of flour are used in the cotton manufacture alone.—M. Coste was instructed, last year, to stock the lake in the Bois de Boulogne with fish, when 50,000 fry of various

kinds of trout were thrown in. As nearly the whole of these have lived, and many of them are from five to six inches long, reproduction will soon commence, and we shall probably learn that Paris is well supplied.—Professor Way is teaching the English how to economize the ammonia of the atmosphere; it is to take advantage of this manure by means of drainage, which promotes the equal flow of rain-water through, instead of over the soil; by deep cultivation and thorough pulverization of the land, which brings every part of it into contact with the air.

JEFFREYS STILL ALIVE.—The former readers of the *Horticulturist* will welcome back to its pages a favorite writer over the signature of *Jeffreys*, who used to criticize with an unsparing but just pen, editors and contributors, in a bold dashing kind of style that was always the cream of the number. We had understood that he had retired from public view, and was living the life of a hermit; from another source that *he was married!* from another that he was dead; a fourth thought he must be offended; but going on a pilgrimage purposely to discover his disease, whatever it might be, we found him as full of life and vigor as ever, managing his own affairs as such an able penman might be supposed to do, full of life and observation, and as merry as a cricket who had secured a good place in a good chimney corner. With some demurs, he agreed to enliven the horticultural circle again, and to-day he makes his return bow with a "critique on the January number," which has the old flavor about it. He is most welcome.

FANCY TRAINING OF FRUIT TREES.—It is a favorite theory of some writers that fruitfulness and barrenness in plants and trees are influenced by the mode of training. Constraining fruit-trees within limited bounds we know answers a good purpose. Hayward, an English writer on the subject, has explained various modes, which we here repeat for the amusement of amateurs. The following in brief is his method:—

If it be desired to train fruit-trees so as to fill a circular space, they are best trained with their branches reversed; they thus bear a great deal of fruit in a small space, and are protected from high winds without stakes. Obtain plants with one upright stem, of from three to four feet in height, and at this height let them throw out from four to six branches three or four feet long, like Fig. 1. Bring down the branches at the winter pruning and fix them to a hoop with willow or twine, thus, Fig. 2. The sap will not now flow in sufficient quantity down the branches to form wood branches at their ends, but the buds will readily form for blossom buds and fruit. The wood shoots will be thrown out on the upper sides of the reversed branches, and in winter may be cut out or brought down as before for a second

Fig. 1. Fig. 2. Fig. 3.

tier, as in Fig. 3; and, on the same principles, may be carried to a greater height. Remove all collaterals as soon as discovered, and as the reversed branches are worn out they must be cut away, and fresh ones brought down. Two tiers will be as much as will be manageable or useful.

The "spiral cylinder" is well adapted to small gardens. Prune and manage the tree so that it shall form four or six branches of nearly equal size near the ground, Fig. 4. When these are three to five feet long, fix six rods or stakes into the earth for supports, in a circle

about the root, as in Fig. 5, the centre dot marking the root, and the others the rods. Each branch is then to be brought down, and being fixed to the rod near its base, the branch is

Fig. 4. Fig. 5. Fig. 6.

to be carried round in a spiral manner, on such an elevation as will form an inclination of fifteen degrees, each being fixed in the same manner; thus all will move in the same direction, like so many corkscrews, as we see in the Cereus tribe in windows, wound round upright sticks, Fig. 6.

As trees trained in this manner need never exceed the bounds allotted them on a border or bed, a greater number may be planted, and a greater quantity of fruit produced in a given space, than can be the case when they are trained in any other manner. Pear and apple-trees thus treated should always be on dwarf-growing stocks.

The Ohio Pomological Society's late meeting was one of great and varied interest; the proceedings, like those of New York, are to be issued in pamphlet form, and will thus be accessible to all. President A. H. Ernst delivered a very able address that will, we hope, be printed in full; it goes over a ground that the young nurseryman and amateur will do well to study and practice, that of Hybridization. He said:—

"We have not come from our homes on an errand of *speculation* for selfish ends; the benefits of a *class* only. No! Our mission is one of universal *philanthropy*. We meet to consult on matters of comfort and good to all; to acquire a more thorough knowledge of the *tree*, the *vine*, and *their fruits*—the best means of improving them—to acquaint ourselves more fully with the nature of their enemies, and their modes of attack; the best means to counteract their destructive effects, and, if possible, to learn how to exterminate them. These are the objects of our mission. If we act wisely, we shall confer innumerable blessings, not only on our cotemporaries, but on millions who will never hear our names; and, as a reward, we shall have the satisfaction, when we retire from the world and leave its busy scenes, that we have done something to promote the comfort of those who shall occupy our places." * * *

Ohio as a Fruit State.—"Let me not be thought tedious, however, and to have taken up the time that should be devoted to a discussion of the fruits before you. I am sure that, on reflection, the importance of what I have advanced will be felt and acted upon. It is appropriate that we take a step forward, and not leave chance unaided in her efforts to improve and bring into existence new varieties for us to pass judgment on, and assign them their place in the catalogue. Our work of *collating* from this *source* will soon be accomplished. It may not be amiss to remark, that as the art of grafting and budding is now universally adopted; that plantations of fruit trees are no longer permitted to grow and mature fruit on the natural stock—by this innovation we are depriving *chance* of accomplishing her accustomed work. It therefore is incumbent on us to be active, and put our knowledge in a shape to produce practical results. Ohio, with a soil unsurpassed, a climate mild and balmy, must not be content to be an indifferent looker-on, or content even as a follower; she should aim to *lead* in the noble enterprise. She did so in forming the *first State Pomological Association*, from which we have good reason to believe that great benefits have resulted."

The Pomologists of this country have got fairly to work, with an enthusiasm that has already accomplished very much, and will do more.

Western New York Fruit Growers.—Mr. P. Barry has kindly furnished a report of this Society's meeting, which was designed for the February number, but was not received in

time. The *Rural New Yorker* contains the very able and interesting speech of the President, J. J. Thomas; it will be read with improvement by all who cultivate fruits. He said:—

"The question is perhaps more easily asked than answered, why it is that while no farmer would think of planting a field of corn to grow among the grass of a meadow, there are so many who will place valuable young trees, which have cost them more than a hundred times as much as the corn they have planted, in the midst of a dense grass sod? Or who, having once planted them in good soil, wholly abandoned them to weeds? However, dear-bought experience is enforcing its lessons, and good cultivation is becoming more frequent, and better understood. * * *

"I have taken the pains, the present season, to measure the products of a few apple trees, set out about six years ago, then two years from the graft. The soil had but one light manuring for many years, and was naturally more sterile than most of our common farm soils. But it had been kept under good clean cultivation. Two of the *Dyer* apple-bore each a bushel and two-thirds; a *Baldwin* yielded three bushels and a half; a tree of the *Minister*, three bushels; a *Belmont*, two years older, bore five bushels; and a *Northern Spy*, eight years transplanted into a large hole containing a portion of compost, bore nine bushels.

"By keeping the ground clear of all vegetable growth in an orchard or fruit garden, whether it be a planted crop, or a self-sown crop of weeds, which is the best and most profitable course (unless it be sometimes that a green crop for manure may be advisable); by adopting this course, five or six dollars an acre are all that need be required, where one or two ploughings and five or six harrowings are given annually—affording an almost incredible supply of the necessaries, comforts, and luxuries of life combined; while without such cultivation, perhaps not a fifth part of the same real value would be afforded. How strange that any one should attempt to save the few by wasting the hundreds! Squandering the dollars to save the cents, most emphatically! * * *

"I hold the inherently wise as well as time-honored rule, that every tree is to be judged by its fruits—by its intrinsic worth, whether Europe or America is the place of its origin. By this rule we all pronounce the older foreigners, the *Bartlett*, *Virgalieu*, *Louise Bonne of Jersey*, and *Flemish Beauty*, and such newer arrivals as the *Rostiezer*, *Giffard*, and *Beurré d'Anjou*, as worthy companions of the *Seckel*, the *Tyson*, the *Brandywine*, the *Washington*, *Sheldon*, and *Lawrence*, and other native Americans; while among the apples, the *Astrachan*, *Dyer*, and *Gravestein* will compare well with our *Melon*, *Hawley*, *Spitzenburgh* and *Swaar*.

"The truth is, we have a long road to travel before we reach a *perfect* list of fruits; and we need all the assistance we may be able to procure from all sources. * * *

"I have taken a little pains to estimate the time required for all our present nurseries in the whole Union to furnish a ten acre orchard to every farm of a hundred acres, in all the States east of and contiguous to the Mississippi River. On the supposition that all the ground occupied by nurseries in densely planted *fruit* trees amounts to ten thousand acres, their entire and continued products would be required for *three hundred years* to fill out all these ten acre orchards. But many estimate that only *one-fifth* of all the trees set out ever reach a successful bearing condition—in which case *fifteen hundred years* would be needed by our present nurseries to plant one-tenth of our entire territory with orchards." * *

Mr. Stone said: "I knew one tree of the Baldwin apple that two years ago produced twenty-eight bushels, that sold for $40. Our Agricultural Committees estimated one acre in orchard as equal in value to twelve in other crops, but he thought the figures large enough at five to one."

Mr. Barry said: "Of pear orchards we have but very few in our country. One is that of Mr. Thaddeus Chapin, of Canandaigua, which has now been set nine years. Six years after being set out, he sent some fruit to New York, and obtained $8 a barrel for it. The next year he had thirty barrels of fine pears from his three acres. For those he obtained $15 a barrel, making $450. This was his own price, and after paying him for them, the market-woman remarked that if he had asked $18 she should have paid it quite as willingly. The year before last he had fifty barrels, which he sold in New York for from $18 to $20 a barrel—making nearly a thousand dollars. This last year his crop was partly a failure, which he thinks was owing to planting corn in his orchard, and close up to the trees. When his pears were nearly grown they dropped off without ripening, and he lost nearly all."

The Chester County Horticultural Society's schedule of premiums for 1856 has been sent us, embracing much that is of interest and value. This spirited society deserves high commendation for what it has accomplished, and the taste it has infused in its neighborhood. There must be much in West Chester worthy of being communicated to the public through our columns.

J. J. SMITH, Esq., EDITOR OF HORTICULTURIST:—Having seen in the *Horticulturist* an account of the vinegar plant, I send to you a small bottle of *tomato* vinegar.

The facility with which a large supply can be obtained may make it worthy of notice. Those skilled in the manufacture may much improve the quality. The juice had sugar added to it. That which was pure became spoiled. Perhaps a fermenting substance added would prevent that. [This appears to be a very good and well flavored article.—ED.]

Respectfully, JACOB T. WILLIAMS, *Philad.*

A PARK IN NEW YORK seems now a probable thing, and, if properly carried out, will prove a blessing to the people, and an example which we trust other cities will not be slow to follow. It has our best wishes.

DR. WARD ON PEAR CULTURE.—The second valuable article from Dr. J. M. Ward on Pear Culture will appear in the April number of the *Horticulturist.*

THE JANE APPLE.—Samples of this apple have been sent us by Benjamin Borden. It is a seedling growing by the side of a fence in Middletown, Bucks County, Pennsylvania, on land of Jane Richardson, from whence its name. It is a medium-sized, good-keeping apple, and we are inclined to think it an acquisition. If Mr. B. will forward us a few grafts, they shall be judiciously distributed.

ANSWERS TO CORRESPONDENTS.—P. Q. R. and E. H. R., &c. &c. in our next.

S. L. GOODALL'S CATALOGUE, from Saco, Me., with descriptions, is one of the best of its kind. It has illustrative engravings, and remarks of great interest to planters.

MISSOURI WINE.—The sample of Missouri wine from Mr. Haas, Boonville, we pronounce *very superior.* It has more the delicate bouquet of *Lachryma Christi* than any wine of American manufacture. If such can be produced for the market, there is, indeed, no need of going abroad for our table-wines.

THE COLD.—At Warsaw, Indiana, on the 8th of January, the thermometer was 19° below zero at 6 P. M., and on the 9th 27° below 0 at 6 A. M., the coldest morning ever known in Northern Indiana. Peaches and young orchards, it was feared, would be injured. On the 24th of December, at Napersville, Illinois, at 6 o'clock, 16° below 0, and, on the 26th, 21° below 0. At St. Paul's, Minnesota, the cold was equally severe, being 27° below 0, and in January even colder. One would think this beyond the endurance of many plants known everywhere as "hardy." On Staten Island the cold has been greater than known there for seven years. Greenhouses suffered much in every direction, even where water was kept at the boiling point all night. Around Cincinnati, just before sunrise, the thermometer fell to 24° and even 28° below zero, and it is feared that the peaches are destroyed. At Cleveland, the modifying influence of the lake was such that the thermometer stood around that city from 14° to 20° below, while a few miles removed from the lake in the direction of Sandusky, a gentleman writes that it ran down to 32°!

On February 6 and 7, 1855, the thermometer was at 26° below zero in the lake counties of Western New York, where 0° is considered very cold and of rare occurrence. Thus we have had two intensely cold winters in succession. There has, doubtless, been much injury to fruit, but our field is now so large that a moderate supply of nearly all the varieties may still be hoped for. Greater attention must be paid to those fruits which have not been affected. We are obliged to many correspondents for thermometrical observations, but, generally speaking, these were well known before we could publish them. In this latitude it has rarely been colder, or of longer continuance.

ANSWERS TO CORRESPONDENTS.—Will U. U. be kind enough to give us an opportunity of addressing a letter to him? Thanks to J. B. P.; but we are supplied. Robert Meston received.

(A SUBSCRIBER.) The seeds from the Agricultural Department of the Patent Office are distributed to agricultural and horticultural societies, by whom they are to be procured on application, &c.

(JOSEPH GARST.) Springfield, Ohio. 1. Hen manure and charcoal would doubtless be as good for young fruit-trees as guano and charcoal.

2. Chestnut and English walnut-trees should be planted as far apart as standard apples, and filberts as near as dwarf pears.

3. Ants may effectually be driven away by a solution of copperas, or by sulphur.

4. You had better not employ any grass or grain among your fruit-trees. A crop that requires manuring and working, such as potatoes or other low crops, that demand the frequent use of the plough or hoe, will not be detrimental for a few years; but, if well stirred, will be useful until the roots have spread over the whole ground.

(H. S. C.) See former volumes for the cultivation of the blackberry; it is an established favorite. The *best* agricultural work is Stephens's Book of the Farm.

(Easter Beurre.) This old variety is a very uncertain fruit; sometimes very fine, mostly *partially* good. If the fruit of "Subscriber," instead of remaining *in* the barrel, had been removed and put on shelves in a dry cellar or closet, out of reach of frost, no doubt more than half of them would have been saved. Pears, with the exception of a few varieties, do not keep well in barrels; they want a cool, rather dry cellar, or basement where a cellar within a cellar—say a closet, with a window eastward—can be constructed. In such a place the writer took out some summer apples and two Andrews' pears, which commonly ripen in September, on the 4th of last January, sound and delicious. They were overlooked on a low shelf in a common provision cellar.

(An Original Subscriber.) Edgings.—There are few plants that make a better edging, where box is not used, than the Sea pink. The common garden thyme makes a pretty edging, the lemon-scented species especially so. The small periwinkle (*Vinca minor*) is very good for this purpose, besides growing well in deep shade.

Dwarf Climbing Vines, "not growing over three or five feet, and not liable to be infested with red spider, and which will retain their verdure till frost," are not common. The several varieties of thunbergia, maurandia, and cypress-vine come nearest to your wishes, though the red spider occasionally preys on the first named. Tropæolum canariense is a good yellow, and Lophspermum scandens, pink.

Bedding Plants, "one and a half feet high, to stay green till frost, and blooming early." The Madagascar periwinkle, pink and white, has as "pretty a habit and as showy bloom as can be desired, and flowers profusely. Cuphea platycentra, scarlet, and the different varieties of Petunia do well. Lantana sellowii and other kinds of Lantana are very fine for this purpose. All these have to be raised in the fall, and kept over the winter in pits or greenhouses. There are not many annuals that can be sown out in spring and retain their verdure till fall. The escholtzias will sometimes (yellow and orange). The globe amaranthuses (white, purple, and yellow) do very well. The following list of annuals are those which retain their verdure the longest, and do not exceed two feet high: Ageratum Mexicanum, blue; Browallia elata, blue; Cacalia coccinea, scarlet; Chrysanthemum euryoides, yellow; Erysimum Peroffkianum, orange; Gaillardia picta, yellow and red; Candy tuft, white and purple; Phlox drummondii, purple and white; Mignionette, buff; and the new cut leaved, white.

Good Bedding-out Plants.—Besides those already given in the above answers, you may try Asclepias curasivica, orange; Pentas carnea, pink; Neirembergia gracilis, white; Ruellia formosa, scarlet; Plumbago copensis, lead; P. larpentæ, blue; Horseshoe geraniums, scarlet or white; Rose-scented geraniums, pink; Heliotropes and Verbenas.

(D. B.) Frosted Plants.—Thaw them gradually, and in the dark. If but a single plant, immerse it in cold water and set it under the greenhouse stage; if the whole house be frozen, put up the shutters, or throw on mats over the glass and syringe well with cold water. Plants which, under ordinary circumstances, are killed by a degree of frost, can often be recovered from severe injury by this treatment.

Death of Dr. Harris.—Dr. Thaddeus William Harris, whose death has recently occurred, will long be remembered for the benefit which his labors have conferred on the public. He was widely known as an entomologist, and his work on *Insects Injurious to Vegetation*, made in pursuance to an order of the Massachusetts Legislature, possesses a practical value of immense importance. At the time of his death he was the Librarian of Harvard College, from which institution he graduated in 1815. He was a member of various scientific and other societies, and in all the relations he occupied he sustained the character of an able and honest man, and has left a name which will be cherished by all who knew him.—*Boston Cultivator.*

Successful Cultivation of Prunes.—Prunes have been very successfully cultivated in Pennsylvania. Among the Economists, in Beaver County, they have been grafted on plums. Mr. Pfeiffer, of Indiana, raised prune trees in large numbers, and sold them at exorbitant prices, some as high as $5 and $10. He had some of the fruit at the Pennsylvania State Agricultural Fair, held at Pittsburg, which sold readily at 50 cents a quart.

To Grape Growers in the United States.—Gentlemen: Having provided myself with the Catawba and Isabella for natives, Black Hamburg, Golden Chaselas, Black Prince, Pitmaston, White Chester, and Early Black July, for foreign, all of which are planted along a tight board fence; the foreign on the south side, native on the north, directly behind the former, for the purpose of hybridizing when all are in bloom; at that period two or three boards may be taken off, the branches interlaced until all the fruit is set. But by taking notes when all grew under the same advantages of the sun and light, I found a difference between the two varieties in the time of blossoming, of from ten to fifteen days; the natives having set their fruit and grown as large as No. 6, shot before the foreign were in flower, thus doing away with all chance for hybrids. Now how long shall I retard the native by applying ice to its roots covered with litter, its top being shaded by the fence; or when shall I commence to stimulate the roots and tops of the foreign, the first by warm manures, the latter by blackened boards, stone and charcoal under the vine against the fence, over which a little flour of sulphur may be thrown to prevent mildew. If any by experiment have caused the two, foreign and native to bloom exactly together, and will give me particulars, either privately or through the *Horticulturist*, it would greatly advance my case, and in all probability, save two or three years in experimenting; and likely be the means of placing on the American table a grape far superior to any now enjoyed. The above Grapes will all ripen their fruit here quite well by being protected through the winter. All my experiments are for open air culture, and particularly to have the pollen, both of native and foreign mingled together for the hybrid; for it strikes me, to cut off the anthers of the Catawba, and allow the Hamburg to furnish pollen only, the offspring would be too tender to stand our winters; and such might not be a true hybrid after all.

Wm. H. Read, *Pt. Dalhousee, C. W.*

Downing's Letters.—The conclusion of these letters we have been obliged to postpone to the ensuing number, together with several communications from correspondents.

Grape-vine Roots or Cuttings.—Dr. Underhill states in the last *American Agriculturist*, that his experience indicates a saving of time by the use of well-rooted plants instead of cuttings, and that the vineyard thus formed, is far more valuable, from its being less subject to injury from rotting or mildew. Where cuttings are planted, the roots usually start too near the surface of the ground, and are then under the influence of heat and moisture; the growth is rapid, increased by every shower in the spring; the sap vessels are large, and when the vineyard is old enough to bear, the month of June presents an abundance of foliage and great promise of fruit. The drought coming on in July, the roots being mostly near the surface, are deprived of the proper supply of nourishment, and soon the rotting commences; the roots also are more liable to injury from winter frosts. When you have well-rooted plants, he continues, you can set them at any depth that experience teaches, according to your soil.

Professor North's Address before the Oneida N. Y. Agricultural Society contains some able remarks, for which we regret we have not space. He says, truly: "Pay 20 dollars for the best orchard in the county, and only one man is encouraged by it; pay the same sum for the best essay on orchard culture, and the whole world of fruit growers would get the benefit."

Downing's Fruits.—We learn with pleasure that Charles Downing is engaged on another edition of his brother's Fruits and Fruit Trees of America; the time has arrived when such a work is required, and we shall look for it with some impatience.

Waste Steam.—The "waste steam" lost to useful purposes may be said to be beyond calculation. Well-regulated bottom-heat having been shown to be of immense importance in gardening, it is surprising that more attention should not be paid to economizing the waste water and steam of engines, where factories are conveniently situated. What may be done without cost by attention to this is shown by an experiment tried by Mr. Dillwyn

Llewellyn, of Wales. From a small eight-inch cylinder engine, employed by him for agricultural purposes, this gentleman conducted a jet of steam for twenty minutes daily, through an inch iron pipe, into a bed of rough stones, covered by a glazed frame; a journal of the temperature was kept, from which it appeared, first, that although steam was introduced among the stones for only twenty minutes a day, the thermometer was raised from 51° to 68° in the first 24 hours; second, that the temperature continued to rise for many hours after the second application of steam, until the thermometer reached 108°; third, that at the end of 19 hours the heat of the frame diminished; yet, fourth, that at the end of *seventy hours* the temperature still was 69°. This is a conclusive answer to those who think that masses of heated water, or heated porous materials, like rough stones, will become so reduced in temperature by a few hours' withdrawal of the prime heating power, as to endanger the plants cultivated in houses thus warmed. The experiment continued to be successful, and enabled pine-apples of the most perfect quality to ripen. A hint might be taken by many manufacturers, to grow grapes and other fruits by the aid of what is now carelessly thrown away.

John W. Degrauw, Esq.'s annual address before the spirited Brooklyn Horticultural Society has been printed in a neat pamphlet. It contains much matter of interest and for thought. Such beautiful places as he describes in the vicinity of Brooklyn almost tempt us to leave our easy-chair.

The Rev. L. Billings's Address before the Adams County Agricultural Society, Illinois, comes to our table in neat and unpretending form, but is full of good thoughts well expressed. The report of the second annual fair, and the premiums, mark a most progressive spirit, for which we are disposed to give Illinois a full meed of credit.

Double Lily of the Valley.—This beautiful novelty is beginning to spread a little among us. It has been known for many years in this neighborhood, but has only of late been procurable. It is one of the *very* valuable additions to our spring bloomers.

Vinegar Plant.—We are indebted to William H. Williams, Esq., banker, of Pittsburg, for a vinegar plant, which we have set to work.

Mr. Glover, the naturalist of the Patent Office, who was sent South, for the purpose of investigating the nature and habits of the insects injurious and beneficial to vegetation, has returned. The Commissioner of Patents expressed himself as highly gratified with the report of Mr. G. in relation to the orange and scale or cocus insects, and the red bug and the caterpillar, which are said to be very destructive to the cotton plant.

Beautiful Picture.—Macaulay, who paints everything in strong colors, gives the following picture in his new volume: "In the southwestern part of Kerry, on the rare days when the sun shines out in all his glory, the landscape has a freshness and warmth of coloring seldom found in our latitude. The myrtle loves the soil. The arbutus thrives better than ever on the sunny shore of Calabria. The turf is of livelier hue than elsewhere; the hills glow with a richer purple; the varnish of the holly and ivy is more glossy; and berries of a brighter red peep through foliage of a brighter green. But during the greater part of the seventeenth century this paradise was as little known to the civilized world as Spitzbergen or Greenland."

Strawberries. An American in London.—The *North American Review* tells the following good story: A countryman of ours, of somewhat rude appearance, walking in the Strand early in May saw his favorite dish of strawberries and cream blushing at him from the counter of a restaurant. Entering, he carelessly called for a bowl, to the marked surprise of several persons present, who knew the extravagance of the luxury, and rightly presumed that the American was ignorant at what cost he was gratifying himself. He had not finished his repast before the curious looks of the company suggested his mistake, and aroused all his latent pride. "What is to pay?" inquired he, as he laid down his dish, not without a glowering side look at the wiseacres who waited for his chopfallen aspect when the victualler's reply should fall upon his ear. "A guinea, sir." Tossing down the coin from a not over full purse, and bridling up with an air of assumed indifference, "I'll take another!" was the American's only rejoinder. How many American travellers cover their ignorance and pride at a similar expense!

Pomological and Horticultural Societies.

The Fruit Growers' Society of Western New York. By P. Barry, Rochester, New York. —Dear Sir: The annual winter meeting of this Society came off on the 8th and 9th inst., the coldest days we have experienced, or are likely to, this winter. Thermometer on the 9th ten degrees below zero, with a high wind. Yet the meeting was successful far beyond anticipation, and was numerously attended by the most intelligent and enterprising nurserymen and fruit growers of Western New York. Their discussions upon well chosen, important subjects were spirited and practical, as you will see, and cannot fail to command the attention of the farmers and land owners in this region, and perhaps elsewhere.

The President, John J. Thomas, delivered an address, which, for conciseness, clearness, and force, I have not heard surpassed. It was a happy blending of the historical with the practical, and was cordially applauded at the close.

There was a grand display of winter fruits. I will give you the names of some of the contributors.

John Parks, of Gates, near Rochester, fourteen varieties of apples, half a bushel of each; superb specimens throughout. The varieties were: R. I. Greening, Baldwin, Yellow Bellflower, Roxbury Russet, Fall Pippin, Golden Russet, Eropus Spitzenburg, Seek no further, Twenty ounce Pippin, Twenty ounce Apple, Talman Sweet, &c.

Col. E. C. Frost, of Schuyler Co., a fine display of *King* and *Wagner* apples.

Charles Lee, of Yates Co., a large basket of the finest specimens of *Wagner* I have ever seen.

John Morse, of Cayuga, a dish of a new apple—*Morse's Seedling*. A very large, handsome red apple, quite as good as the Baldwin, and keeps till March.

James H. Watts, a large basket of the finest *Northern Spy*.

A. G. Owens, of Big Flats, fine specimens of King apple.

J. W. Seward, of Rochester, the *Saratoga*, a beautiful apple, and the "Golden Head," both very little known.

C. L. Hoag, of Lockport, six varieties of pears.

Jno. R. Lee, of Buffalo, Northern Spy apples.

Austin Pinney Clarkson, twelve varieties of apples, Beurré d'Aremberg pears, and *Catawba* grapes, in fine condition.

Stone and Cook, of Oswego Co., twenty-five varieties of apples, including the Wagner, N. Spy, and Jefferson County apple.

Hooker Darley & Co., Rochester, eighteen varieties of apples.

H. E. Hooker & Co., Rochester, thirty varieties of apples and Easter Beurré pears.

Donellan & Nephews, of Greece, twelve varieties of apples.

John J. Thomas, of Macedon, twenty-five varieties of apples, including a dish of *Mother*, very beautiful and of the highest excellence; also Paradise Winter Sweet, very handsome and good.

Timothy Stillman, of Dunkirk, Erie Co., a dish of "Orange Russet," an apple not before seen in collections, and of excellent quality.

R. H. Brown, of Greece, twenty-four varieties of apples, and *Vicar of Winkfield* and *Winter Nelis* pears.

Dr. E. W. Sylvester, of Lyons, six varieties of apples.

Messrs. A. Frost & Co., twenty varieties of apples.

James Lennox, of Rochester, Northern Spy apples, and fine Isabella, Catawba, and Clinton grapes.

Daniel Holmes, of Wilson, N. Y., a very beautiful seedling apple.

Jesse B. Walker, fourteen varieties of apples.

James M. Mattison, of Tompkins Co., a fine collection of apples, including the King.

Ellowngeр & Barry, thirty-six varieties of apples and forty-three varieties of pears; among the latter the Easter Beurré, Glout Morceau, and Vicar of Winkfield were particularly fine and much admired.

Some I have no doubt overlooked, but a complete account of all will be given in the *Transactions*, to be published soon.* In all, there were upwards of twenty-five contributions,

* The *Transactions* will contain a full account of the proceedings, besides reports from county committees and contributions from experienced fruit growers. It will be an interesting volume.

and all excellent of their kind; and, what is very important, in a fit state to be compared and criticized.

The main subjects discussed were: 1st. Can the cultivation of fruits for market, on an extensive scale, be recommended to the farmers and land owners of Western New York?

2d. If so, what kind or class of fruits, as apples, pears, peaches, &c., are likely to be most advantageous or remunerative under all the circumstances?

3d. How extensively is it safe to embark in the cultivation of Winter Pears?

4th. Is it advisable to plant Pears on Quince for extensive market orchards?

These are questions of vital importance to Western New York at this moment, and I believe that the facts and opinions elicited on this occasion, touching them, will be carefully considered. The destruction of our wheat crop by the weevil, together with western competition, have already prompted some change, and not a few begin to think that Western New York was intended to be a great fruit garden for the large cities.

Towards the close, the following resolutions were adopted, offered by H. C. White, Esq., of Buffalo:—

Resolved, That this Convention confidently recommend to the farmers of Western New York an increased and extensive cultivation of fruit for market, as an easy, sure, and safe means of insuring ample and speedy profits on the amount of capital invested, and the amount of care and labor required.

Resolved, That the cities on the seaboard, interior cities and villages, in connection with the extensive demand at the West for good fruits, render it morally certain that the fruit market cannot be overstocked to the prejudice of largely remunerating prices for many years to come, if ever.

Resolved, That to Apples and Peaches, as crops requiring least care and skill, the general farmer may most easily direct his labors; while the cultivation of choice varieties of fall and winter Pears, the Grape, and Strawberry, offer promise of the most remuneration for well directed labor and skill.

Resolved, That we deem the cultivation of the Pear on Quince stock, under favorable circumstances, worthy of high commendation; but that we cannot confidently recommend its general cultivation among farmers, believing those on Pear stocks will be more safe, longer lived, and insuring, for a series of years, as a general crop, a better return for the labor and capital invested.

Resolved, That to insure the proper return for labor in fruit culture, especial attention will be required to the judicious selection of good varieties, to care and skill in culture, and as of paramount importance to a full knowledge of the best means for ripening, preserving, and marketing fruits of all kinds.

A very short time was devoted to the consideration of varieties, this subject having been already pretty well canvassed in previous conventions. A committee was appointed to name a few fruits worthy of extensive culture for market, and the following were submitted and approved by nearly unanimous votes:—

The following Apples were recommended for general cultivation in this section: King, of Tompkins County, Rhode Island Greening, Baldwin, Northern Spy, Gravenstein, Fall Pippin.

Pears—Bartlett, Louise Bonne de Jersey, Virgalieu, Lawrence, Vicar of Winkfield, Easter Beurré, Glout Morceau, Sheldon, Flemish Beauty.

I ought to have mentioned that our excellent Secretary, John B. Eaton, of Buffalo, was prevented from attending by a storm; his place was efficiently filled by Mr. R. R. Scott. If the weather had been moderate, I have no doubt the attendance would have been larger than any previous meeting of the kind in this country.

You may therefore record the fact that the Fruit Growers' Society of Western New York is established on a firm basis, and has already given a guarantee of its permanence and efficiency.

Horticultural Society of the Valley of the Genesee.—The annual meeting of this Society was held at the Court House, in Rochester, on Monday, the 11th ult., W. A. Reynolds, the President of the Society, in the chair.

The following officers of the previous year were nominated, and unanimously re-elected: *President*—W. A. Reynolds. *Vice-Presidents*—H. N. Langworthy, D. C. Greenleaf, N. Hayward, John F. Bush, Jas. Upton, and Asa Rowe. *Corresponding Secretary*—H. E. Hooker. *Treasurer*—J. W. Watts. C. W. Seelye was nominated and elected *Recording Secretary*.

Mr. Barry presented a notice from the President of the American Pomological Society, proposing the 30th day of September next for the commencement of the Semi-Annual Exhi-

bition of that Society, which is to be held in Rochester. A number of gentlemen thought a week earlier than the time proposed would be more convenient for those residing in the Northern and Western States, who would be likely to be present.

The following resolution offered by Mr. Barry was passed:—

Resolved, That this Society would suggest the 23d of September for the opening of the American Pomological Society, provided this be consistent with previous appointments of like nature.

The chair appointed a committee of ten to make arrangements for the meeting of the American Pomological Society, as follows: L. A. Ward, Hon. John Williams, James H. Watts, D. D. T. Moore, James P. Fogg, Joseph Frost, George Ellwanger, Isaac Hills, H. E. Hooker, C. W. Seelye.

On motion of Joseph Frost, the President of the Society, W. A. Reynolds was added to the Committee. C. W. SEELYE, *Sec'y*.

PENNSYLVANIA HORTICULTURAL SOCIETY.—The stated meeting of the Society was held at Concert Hall, January 15, 1856, Robert Buist, Vice-President, in the chair.

Premiums were awarded as follows, by the Committee on Plants and Flowers:—

Collection of Twelve Plants—for the best, to Robert Buist; for the second best, Thomas Robertson, gr. to B. A. Fahnestock. *Specimen Plant*—for the best, to the same, for *Chorozema varium;* for the second best, to R. Buist, for *Correa speciosa ventricosa.* A premium of five dollars to R. Buist for three new plants—*Lonicera speciosissima, Oncidium sp.* and double *Spirea Reevesii. Table Design*—for the best, to Barry Higgins, gr. to D. R. King. *Basket*—for the best, to J. J. Habumehl, gr. to J. Lambert; for the second best, to Mark Hill, gr. to M. W. Baldwin. *Bouquets*—for the best pair, to J. J. Habermehl. *Special premium* of one dollar to Robert Kilvington, for a bouquet. The committee notice a new plant shown for the first time, *Azalea Bealii*, from Mr. Fahnestock.

By the Committee on Fruits. *Pears*—for the best twelve specimens—the "Niles"—to W. V. Pettit; for the second best, to Isaac B. Baxter. *Special premium* of five dollars for a fine display of pine-apples, to Chs. Sutherland, gr. to John Anspach. They notice a specimen of pears from J. E. Mitchell, which they did not recognize, but consider it a very hardy variety.

By the Committee on Vegetables. *Display*—for the best, by a private gr. to Mark Hill.

The Treasurer submitted his semi-annual statement of account to December, which was read and referred.

The amendment to the 9th by-law proposed at the last stated meeting, of striking out the last clause of, "and upon the payment of one dollar and fifty cents," was adopted, thus furnishing to members the diploma without charge.

Member elected—John K. Neff.

OBJECTS EXHIBITED, not previously mentioned. *Plants* by Bobert Buist—*Daphne indica rubra, Epacris minuata, E. Copei, Camellia japonica fimbriata, Tillandria thrysiflora, Cypripedium insigne, Bigonia incarnata, Gesneria oblongata, Tritonia uvaria* (new), *Oncidium ornithorynchum, Tropœolum Lily, Schmidt*, and *Kennedya Maryata.* Specimen—*Correa speciosa ventricosa.*

From B. A. Fahnestock's—*Strelitzia reginæ, Justicia parcifolia, Eranthemum pulchellum, Correa ne plus ultra, C. rubra, C. speciosa, Cytisus onospermum, Cypripedium insigne, Epacris delicata, E. Tauntoniensis, Primula albo-plena*, and *Poinsettia pulcherrima.* Specimen—*Chorozema varium.* New plant—*Azalea Bealii.*

From J. F. Knorr's—Three *Hand Bouquets*, with others noticed above.

ANNUAL MEETING.—At the annual meeting, held January 15, 1856, E. W. Keyser was called to the chair, and J. E. Mitchell appointed Secretary. Tellers were appointed, who reported that the following gentlemen were elected officers for the ensuing year:—

President—GEN. ROBERT PATTERSON. *Vice-Presidents*—JAMES DUNDAS, E. W. KEYSER, B. A. FAHNESTOCK, ROBERT BUIST. *Treasurer*—JOHN THOMAS. *Corresponding Secretary*—THOMAS C. PERCIVAL. *Recording Secretary*—THOMAS P. JAMES. *Professor of Entomology*—SAMUEL S. HALDEMAN, A. M. *Professor of Botany*—WILLIAM DARLINGTON, M. D. *Professor of Horticultural Chemistry*—ROBERT HARE, M. D.

Calendar of Operations.

MARCH.

BY WILLIAM SAUNDERS.

VEGETABLE GARDEN.—This is proverbially a busy month in gardens; much, however, depends upon the state of the weather and the soil. The principal crops should be put in as early as possible. A few days' delay at this time is frequently the only difference between failure and success. Those, therefore, who have duly attended to the draining and aerating of the soil will now reap the advantages of their foresight, in the facility with which they can crop the ground, as there is no gain in cropping before the soil is in a fit condition. Clayey loams require especial care: if they are tramped upon or disturbed while wet, the ground will not recover its friability during the season, but will remain lumpy and crack open in fissures during dry weather, to the great injury of the plants growing in it.

Manure that is applied to early crops should be well decomposed, that its action may be concentrated and immediately effective. Premising that the ground has previously been deeply turned over, the manure should only be lightly dug in: for early peas, horn carrot, parsley, onions, &c., this is a good method; but for crops that have to withstand the droughts of summer, the manure should be put in the bottom of the trench, not less than a foot below the surface.

Among other things requiring earliest attention may be mentioned salsify, onions, parsnips, spinach, turnips, beets, parsley, peas, and potatoes; the two former must be sown early to get anything like a proper crop; for, unless they get a good growth before warm weather, they are severely checked, and onions are by this means frequently not larger than chestnuts.

All garden crops should be grown on the drill system; it is otherwise impossible to do them full justice in culture. A rake should never be employed in the preparation of ground for seed. *This as a rule.* Exceptions may be made in particular cases; but very much injury results from the prevailing system of breaking and raking the ground until it is as fine as powder. Our heavy rains beat such soils into a mortar consistency, and the sun bakes it into a hard crust, through which young plants cannot penetrate. Equally injurious is that old system, which is yet frequently recommended, to trample in seeds. The great feature in cultivation is to keep the soil loose, more especially on the surface, as it retards evaporation of contained moisture, and admits the unimpeded access of the various agents of vegetable growth to the roots of plants.

With regard to the depth that seeds should be covered, it is a safe rule to cover them with a depth of soil about equal to their own thickness. This cannot always be strictly done, but it should be aimed at as near as possible.

Much difficulty frequently occurs in raising young crops in strong soils, from their liability to bake on the surface, as alluded to above. A slight covering of hay or short grass prevents the formation of this crust, and enables the tender plants to get through the surface; but, unless carefully watched, and the covering removed at the exact moment, the crop will run a risk of destruction from its being shaded and drawn up tender. The best material for this purpose that I have ever used is wheat chaff. A slight sprinkling over the drills will prevent injury from rains, &c., and, from its nature, offers no resistance to the future growth of plants. Of course, it is allowed to remain. I know of no superior method to insure a speedy germination and growth of small seeds, such as celery, carrots, &c. Even should the weather prove otherwise unfavorable to their growth, a good crop of young plants may thus be rendered certain.

For early crops the old adage of "sow thick and thin quick" is very appropriate. One pint of peas will sow a row of 60 feet; for late crops the same quantity will sow 100 feet. Carrot, one ounce will sow a row of 150 feet long; parsnip, half an ounce 150 feet; Spinach, one ounce 120 feet; beans, one pint will plant 150 feet of a row; and half an ounce of cabbage, brocoli, cauliflowers, and their allies, will seed a bed of 40 square feet.

Those who have wet, late soils to work on, will find it a great advantage in their early crops of peas and beans to plant them on the surface, and throw a little soil over them with a spade. Thus elevated the plants are in a better position to withstand extremes either of wet or cold.

New plantations of asparagus, rhubarb, and horseradish may be made now. The soil should be trenched eighteen inches deep, and heavily manured. The former is most readily

cultivated when planted in rows three feet apart, plants six inches apart. Two year old plants should be used, or sow seed and thin out as they advance.

Those who have the convenience of a greenhouse, grapery, or even a spare frame, may forward a few dozen pots of sweet corn, peas, or dwarf beans. By doing so, a dish or two of these vegetables may be had several days in advance of the regular crop. The corn should be put out in the ground when about a foot high, the peas and beans when grown three inches. Sow the peas thickly over the surface of the pots, and, when planting them out, separate them gently in the drill. They should be staked at once, which will protect them from frosty nights. The above is the most convenient method of forwarding peas. It is necessary that all crops thus forwarded should be thoroughly inured to the weather, by exposure several days before final transplanting.

HARDY FRUIT.—The extreme severity of the weather that we have experienced has caused great destruction among plants, and much anxiety is felt with regard to its effect on the coming fruit season. These visitations ought to impress fruit growers with the great necessity for close observation in ascertaining the most eligible conditions and localities for orchards. Attention should be particularly directed to insure those conditions that will favor thorough ripening of the wood in the fall; for we may rely upon it that this is the most important, and, indeed, the only practicable preventive against injury from severe frosts. It is well known that many plants which, in their native climates, can endure very low temperatures, are, under our artificial treatment, unable to withstand the slightest frost. We are told that in their natural condition the young wood of these plants is so thoroughly matured as to be as brittle as glass, even to the extreme points of the shoots. This is a most interesting question to fruit cultivators, and, although practice points to various expedients that will assist maturation of the wood, there is no single requirement so essential, or so productive of permanent benefit as thorough drainage, and consequent ventilation of the soil.

Low, sheltered situations are unsuitable for fruit trees, not only from a tendency to prolong growth in autumn, but also from the liability of early action in spring exciting the flower-buds, and rendering them liable to be destroyed by frosts. It might also be worthy of consideration whether orchard trees are not generally planted too thin. By planting 18 or 20 feet apart, instead of 30 and 40 feet, the foliage would in time completely shade the ground, prevent surface radiation of moisture, and the same amount of trees could be set in smaller space. The entire surface of the ground could then be annually mulched by a top dressing of manure, and early in spring, and at intervals during summer, the whole ground kept loose and porous by slight diggings with suitable forks.

RASPBERRIES.—The formation of young plantations may now be proceeded with. A deep friable soil, on a gravelly bottom, with the surface gently sloping, is the most suitable for them. On undrained and retentive subsoils the canes never ripen so as to be sufficiently productive. They cannot flourish in soil destitute of lime. This mineral enters largely into the composition of the cane, and frequent applications of it are required to maintain a healthy and productive plantation. They should be planted in rows four feet apart and two feet from plant to plant, trained on a trellis, as recommended in the last number of the *Horticulturist*. The usual method of tying them up in bundles to single stakes prevents the proper development of the plants, and is ruinous both to the quantity and quality of this most desirable fruit. Old plantations should receive a top dressing of bone dust, lime, guano, or rotted yard manure, forked slightly into the soil. If they are trained to single stakes, thin each plant to four or five good canes; trained to a trellis they should be tied about nine inches apart.

STRAWBERRIES.—Fork over, or otherwise cultivate between the rows, previously spreading on a dressing of superphosphate of lime. The stirring will be a necessary operation from the consolidation of the soil by the long-continued covering of snow. Prepare for new plantations by trenching eighteen inches deep, incorporating plenty of manure. Fine fruit cannot be produced unless the soil is deep, rich, and free of stagnated water in the subsoil. The roots must be allowed to descend, in order that sufficient nutriment may be available at the ripening season. The reverse of this produces those small, flavorless fruits which unfortunately are the rule, instead of, as might be, the exception.

In planting, it must be borne in mind that a due portion of staminate plants are indispensable to success. Upon the whole, it is a question whether any variety can excel Hovey's seedling for general purposes. The Cushing, Boston Pine, and Buist's Prize are considered good staminate sorts.

GRAPERY.—In cold graperies, the vines will be starting to grow towards the end of the month. It is well to retard them as long as possible. The worst feature in cold houses is the liability to injury from late frosts after growth has commenced. It is therefore advisable

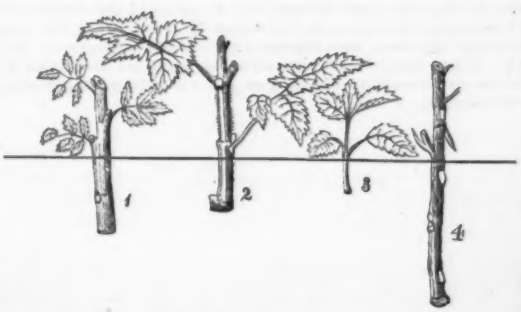
to put in a hot-air flue in all graperies. The expense of a furnace is not worth mentioning, and it is, after all, as simple and efficient a system of heating as any, and decidedly the cheapest. Admit air freely when the weather is favorable; cold, dry winds are to be especially avoided. Keep the vines tied down in a horizontal position; this will retard them somewhat, and cause the lowermost buds to break equally with those situated nearer the top. The border may receive a top dressing of manure, forked carefully over. Keep it as dry as possible until a healthy root action has commenced. Young plants may be raised from eyes; a single bud is sufficient; one in a small pot, which is the best way; or insert them thickly in a large one, or a box. In either case, they require to be set on bottom heat to root freely. They will root without heat, but will be late. Do not over-water them; keep the soil moist, but not wet, until roots form; and take especial care not to cover the bud or eye with soil when putting them down.

Forcing-houses.—Should red spiders make their appearance upon any of the plants, smear a mixture of sulphur and water on the heater. There is no danger of hurting the plants so long as the sulphur does nor burn. While the plants are in blossom, syringing has to be in a measure withheld, which frequently allows these insects to gain a footing. When fruit is set, the watering and cleaning of the leaves should be duly attended to, and continued until the fruit changes color to ripen. Strawberries in small pots require a large supply of water. Setting the pots on sods will help to retain moisture about the roots. The soil should be kept drier as the fruit approaches maturity. This will increase its flavor, as well as hasten the ripening process.

Conservatory.—This is distinguished from a greenhouse more from its proximity to the dwelling than anything else, and is a place for the display of plants in flower, rather than for growing them. It therefore requires the aid of a greenhouse to keep up a succession of flowers. When of sufficient size, a few orange-trees, acacias, Camellias, azaleas, myrtles, &c., may be planted in beds. Movable trellis should be provided for the display of flowering plants in pots. A greenhouse temperature is suitable. Such a house ought to communicate with the rooms in the dwelling, everything kept in the most perfect order with regard to cleanliness, and all necessary work performed early in the morning, in order not to disturb that enticing repose and seeming seclusion, which add so much to the enjoyment of these structures.

Greenhouse.—Attention should now be directed to the propagation of plants for flowering next winter and early spring. Secure a good stock of Bouvardia leiantha, Cestrum aurantiacum, Coronilla glauca, Cytisus racemosa, Linum trigynum, Epiphyllum truncatum, Tropæolum Lobbianum, Daphnes, Polygalas, &c. It is also a good time to propagate the various hard-wooded plants, so that the young plants may be of sufficient strength to stand easily through the winter. The principle of striking cuttings does not seem to be very generally understood. A cutting is simply a part of a plant taken off and placed in a position to form roots, and become in all respects a living representation of the original from whence it was taken. The "position" in which it should be placed, and the care required, depend upon the kind of cutting and its maturity. The following figures will assist us in a brief description.

No. 1 represents a rose-cutting of half ripened wood, made off a shoot immediately after it has done flowering. No. 2, a geranium-cutting of a similar kind. No. 3 is a point of a young growing shoot, such as the point of a fuchsia, or any side shoot of a growing plant. And No. 4, a gooseberry, grape, or similar plant, after the wood is ripened and the leaves fallen. In the latter case, there are no leaves to extract the sap and disturb its equilibrium; the root-forming process proceeds slowly, but without further care. No. 3 is soft and succulent in all its parts, and furnished with a quantity of tender leaves; consequently is easily



destroyed. Nos. 1 and 2, although furnished with leaves, are more matured in all their parts. While, therefore, No. 4 may be fully exposed to sun and air without injury, Nos. 1 and 2 will require shading from bright sun, and should be placed in a sheltered position such as is afforded by the interposition of a wall or close hedge. No. 3 must not only be shaded from bright light, but placed in an atmosphere saturated with moisture, so that there will be no extraction of the juices until roots are formed. All cuttings root soonest when the soil in which they are inserted is warmer than the surrounding air. The whole "mystery" lies in preventing evaporation and shrivelling up of the shoot until roots are formed. The figures show the particular manipulations required in preparing the cuttings, and the depth they should be placed in the soil. The line represents the surface.

CINNERARIAS.—Select the best shaped and most distinct colored flowers for seed. These beautiful plants are indispensable for spring flowers. To get good seed, choose one or two strong trusses and cut out all the others; set the plants in a light, airy situation, and water occasionally with weak guano water.

CALCEOLARIAS.—This beautiful class of plants is much neglected. No one who has had the pleasure of seeing a good assortment would willingly be without them. They require a free, open soil, and no more water than will keep the soil regularly moist. Hybridize them to improve the varieties, and save the seed carefully as it ripens.

PELARGONIUMS.—As these advance to bloom, let them receive copious supplies of water. To flower well, the pots should now be filled with roots. Neglect in watering will therefore injure the flowers. The scarlet sorts are seldom bloomed well in the greenhouse. I lately saw some with large trusses containing upwards of 150 blooms. To produce such magnificent blooms the shoots are pinched close down to the flower stem.

DAPHNE INDICA RUBRA.—One of the sweetest plants in existence, but rarely found in good health. It requires to be grown freely now. Keep warm and well syringed, and but sparingly watered at root. Soil very porous and well drained.

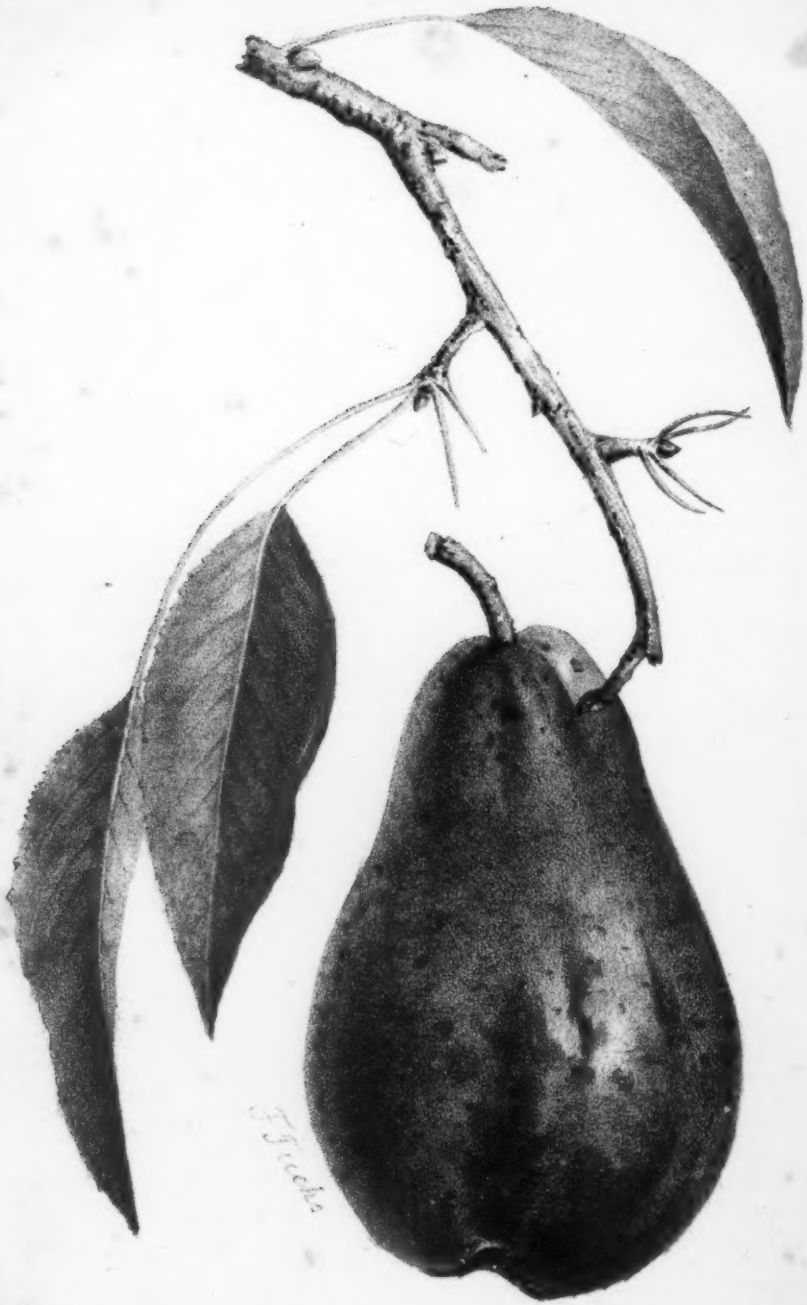
Tropæolums, Kennedias, and other climbers should be looked over every day or two, and neatly trained to the trellises, otherwise they will soon become unmanageable. Fill up the lower portion of the trellis well at first.

Encourage growth on summer flowering plants, and shift into the flowering pots, such as fuchsias, clerodendrons, achemenes, gloxinias, torenias, gesneras, Chinese hibiscus, &c. Always keep one end of the house closed up at this season, and arrange plants that are making young growths in a group, with the smaller ones in the front, on shelves near the glass. Water always in the morning, and keep a good heat while there is light. If the thermometer does not descend below 35° in the mornings, no fire heat will be necessary.

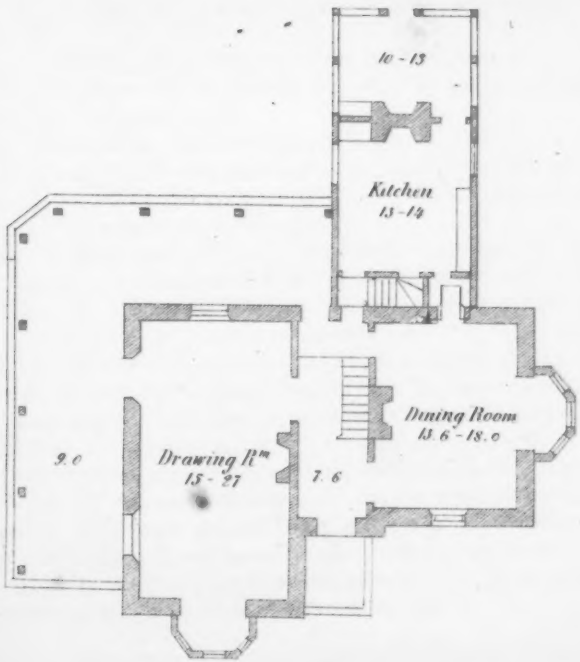
FLOWER-GARDEN.—To have a good display of flowers during next summer, dig five or six inches of manure eighteen inches deep in the flower beds. If the ground is trenched over and the poor soil brought to the surface, so much the better. The surface soil being poor will throw the plants into flower at once, and this flowering property will be maintained as warm weather increases, on account of the roots coming in contact with the manure below.

LAWNS.—It is of no use to anticipate the enjoyment of a good lawn, unless the soil is made deep and put in the best order. Trench it over two feet in depth, if a small plot: if it extends to acres, put in a subsoil or trenching plough, and let the work be done thoroughly. Nothing less will suffice. There are no half way compromises in this matter.

GENERAL REMARKS.—This is a season when many are stocking their vegetable, fruit, and flower-gardens; a little advice may not be out of place. Be careful, then, of your purchases; buy nothing that is second-rate, and do not hunt after bargains at auction stores. *The best of everything takes up no more room than the worst.* Deal with respectable established nurserymen and seedsmen, men who have reputations to preserve. Make out your lists beforehand, and, if you cannot trust your own judgment, get the advice of some experienced friend on whom you can rely. By doing so you will save your ground, your time, your money, and your temper.



CHANCELLOR PEAR



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